S. HRG. 99-571

LAKE ANDES–WAGNER PROJECT

HEARING

BEFORE THE

SUBCOMMITTEE ON WATER AND POWER

OF THE

COMMITTEE ON ENERGY AND NATURAL RESOURCES UNITED STATES SENATE

NINETY-NINTH CONGRESS

FIRST SESSION

ON

S. 252

A BILL TO AUTHORIZE THE SECRETARY OF THE INTERIOR TO CONSTRUCT, OPERATE, AND MAINTAIN THE LAKE ANDES–WAGNER UNIT, SOUTH DAKOTA PUMPING DIVISION, PICK-SLOAN MISSOURI BASIN PROGRAM, SOUTH DAKOTA

WAGNER, SD, NOVEMBER 2, 1985

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CONTENTS

	Page
S. 252	3

STATEMENTS

Abdnor, Hon. James, a U.S. Senator from the State of South Dakota	5
Andera, Hon. Leonard, State senator, Chamberlain, SD	44
Chappelle, Warren, acting preservation chairman, Missouri Breaks Audubon Society, Pierre, SD	76
Crisman, Roland, chairman, Lake Andes-Wagner Irrigation District	54
Daschle, Hon. Thomas A., a U.S. Representative from the State of South Dakota, as presented by Ross Haepul	22
Eitemiller, Charles, Armour, SD	159
Engelmeyer, Joe, chairman, Planning and Development District III, as presented by Ray Duncanson	153
Goldhammer, Marc, manager, Lake Andes-Wagner Irrigation Project, Wagner, SD	69
Holzbauer, Leo, chairman, Lake Andes-Wagner Water Systems, Inc., Wagner, SD	58
Janklow, Hon. William J., Governor, State of South Dakota	9
Kisely, Alvin, Charles Mix County, SD	164
Kocer, Hon. Albert, State representative, Wagner, SD	45
Koepsel, Kirk, conservation chairman, South Dakota Chapter of the Sierra Club, Pierre, SD	125
Kuca, Richard, Wagner, SD	159
Laberee, Lyle, chairman, Central Charles Mix County Development Association, Lake Andes, SD	142
Loucks, John, president, Upper Missouri Water Users Association, Rapid City, SD	143
Madsen, Robert H., regional planning officer, Upper Missouri Region, Bureau of Reclamation, Billings, MT, accompanied by John Lawson	30
Magera, Edgar J., on behalf of the South Dakota Water Congress, Pierre, SD	150
Morrow, Daniel A., Charles Mix County, SD	164
Murkowski, Hon. Frank H., a U.S. Senator from the State of Alaska	1
Slade, Robert, chairman, Southern Missouri Water Development District, Tyndall, SD	62
Soukup, Albert, chairman, Charles Mix County Commissioners, Wagner, SD	149
Svatos, Dan, Lake Andes, SD	157
Uecker, John, Wagner, SD	158
Van Gerpen, Edward, Avon, SD	163
Winter, Morris, Lake Andes, SD	165
Wipf, Owen, chairman, South Dakota State Game, Fish and Parks Commission, Wagner, SD	128

APPENDIX

Additional material submitted for the record	167

LAKE ANDES-WAGNER PROJECT

SATURDAY, NOVEMBER 2, 1985

U.S. SENATE,
SUBCOMMITTEE ON WATER AND POWER,
COMMITTEE ON ENERGY AND NATURAL RESOURCES,
Wagner, SD.

The subcommittee met, pursuant to notice, in the Wagner Community School, Wagner Heights, Wagner, SD, Hon. Frank H. Murkowski presiding.

Present: Senators Murkowski and Abdnor.

Also present: Russell R. Brown, professional staff member; and William B. Conway, counsel for the minority.

OPENING STATEMENT OF HON. FRANK H. MURKOWSKI, A U.S. SENATOR FROM THE STATE OF ALASKA

Senator MURKOWSKI. Good morning, I would call this Subcommittee on Water and Power of the full Committee on Energy and Natural Resources to order. We are holding this hearing today in Wagner Community School, Wagner Heights, Wagner, SD. I want to compliment Mr. Don Paul who I understand is responsible for making the arrangements, and turning on the lights, and getting the heat working this morning. It is a pleasure to welcome those of you who are witnesses as well as those that are overseeing the testimony that will be given this morning. The purpose of the hearing is to take testimony on Senate bill 252, which was introduced by two of my colleagues from your State, Senator Abdnor and Senator Pressler. The legislation was introduced on January 22 of this year. As you know, Senate bill 252 would authorize the Secretary of the Interior to construct the Lake Andes-Wagner irrigation project. Before we start the hearing, I want to say that it is not my first experience in holding hearings in your State of South Dakota. In September 1981, in Pierre, I had the distinction of holding a hearing. We went through 84 witnesses in 1 day. I think we started about 8 a.m. and finished about 6:30 p.m. Very, very hot day, and I assume the arrangements here are not significant in the sense of the particular positions of those who are either for or against the project as they were at that particular hearing. One side of the hall was filled with opponents and the other side proponents. When a witness said something that was favorable to one group, why there was a reaction, either a cheer or a hiss. I don't see anything like that here today. We are looking forward to a worthwhile hearing, and a substantial record being obtained. Before we start the hearing, there are a few housekeeping measures that need to be taken care of. Evidently, each witness has been instructed to fill out a

witness card, and it is necessary that they be returned to the staff when they have been completed. Also, there is a signup sheet for those who would like to receive a copy of the hearing when it is published.

Finally, the hearing record will remain open for 2 weeks for those who may wish to submit additional information for the record. Materials may be sent to the Subcommittee on Water and Power, Room 358, Dirksen Senate Office Building, Washington, DC. With respect to the many witnesses who have been asked to testify, and I think we have about 23 this morning, I would ask that you would summarize your statement. I assure you they will be entered into the record. I am told that there is some inducement to go through the hearing in a relatively expeditious manner, so I will allow approximately 10 minutes per witness, that we have a timekeeping capability up here, and I will interrupt you at the conclusion of 10 minutes and ask that you summarize your remaining remarks. The necessity of that is dictated by two realities. One, we would like to finish the hearing by lunch. Two, I have been invited to participate in a pheasant hunt this afternoon. So that being the case, it is my intention to conclude the hearing by either lunch or the time pheasant hunting starts. I would look forward at this time to the first witness, my colleague, Hon. James Abdnor, a U.S. Senator from South Dakota. I had the pleasure of making a rather late start out of Washington, DC, last night, I think we left Washington about 6 p.m., and got in here about midnight in Lake Andes at least. So, I have already had a chance to hear from him, but we welcome you, Senator Abdnor, and look forward to your testimony. You may proceed.

[The text of S. 252 follows:]

II

99TH CONGRESS
1ST SESSION

S. 252

To authorize the Secretary of the Interior to construct, operate, and maintain the Lake Andes-Wagner Unit, South Dakota Pumping Division, Pick-Sloan Missouri Basin Program, South Dakota.

IN THE SENATE OF THE UNITED STATES

JANUARY 22 (legislative day, JANUARY 21), 1985

Mr. ABDNOR introduced the following bill; which was read twice and referred to the Committee on Energy and Natural Resources

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A BILL

To authorize the Secretary of the Interior to construct, operate, and maintain the Lake Andes-Wagner Unit, South Dakota Pumping Division, Pick-Sloan Missouri Basin Program, South Dakota.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of the Interior, acting pursuant to the Federal Reclamation laws (Acts of June 17, 1902, 32 Stat. 388 and Acts amendatory thereof and supplemental thereto), is authorized to construct, operate, and maintain the Lake Andes-Wagner Unit, South Dakota Pumping Division, Pick-Sloan Missouri Basin Program, South Dakota, substantially

in accordance with the Lake Andes-Wagner Unit Report I and draft environmental statement, for the purpose of providing irrigation water, conserving fish and wildlife, and providing other beneficial uses for approximately forty-five thousand acres of land. The principal features of the project include a main pumping plant located on Lake Francis Case, relift plants, a main canal system, and a drainage system. The project will also include measures to mitigate for project caused wildlife habitat impacts.

SEC. 2. The Lake Andes-Wagner Unit shall be integrated physically and financially with the other Federal works constructed under the comprehensive plan approved by section 9 of the Flood Control Act of December 22, 1944 (58 Stat. 887, 891), as amended and supplemented. Repayment contracts for the return of construction costs allocated to irrigation will be based on the water user's ability to repay as determined by the Secretary of the Interior; and the terms of such contracts shall not exceed forty years following the permissible development period. A portion of the reimbursable costs for irrigation service to Indian-owned lands will be indefinitely deferred under the Leavitt Act authority. Reimbursable costs associated with conservation and development of fish and wildlife resources in connection with the Lake Andes-Wagner Unit shall be in accordance with the provi-

sions of the Federal Water Projects Recreation Act (79 Stat. 213), as amended by section 77 of Public Law 93-251.

SEC. 3. There is hereby authorized to be appropriated for construction of the Lake Andes-Wagner Unit the sum of $155,110,000 (indexed to January 1984 price level) plus or minus such amounts, if any, as may be required by reason of changes in construction costs as indicated by engineering cost indexes applicable to the types of construction involved and, in addition thereto, such sums as may be required for operation and maintenance of the works of said area.

STATEMENT OF HON. JAMES ABDNOR, A U.S. SENATOR FROM THE STATE OF SOUTH DAKOTA

Senator ABDNOR. Mr. Chairman, committee staff, you certainly have had an opportunity to hear from me. All the way out from Washington you had to put up with me. You were a captive for me, and I had a chance to probably say a lot more then than I will briefly say now, but I do want to say thank you to you and the staff. How well I recall the hearing you had out at Pierre, it was a hot day, and it was an awfully long day. I know you are going to enjoy your visit here today, and you are so loyal to keeping your commitments. I know last night when we were in on the budget ceiling, the debt ceiling, you would like to have stayed, but we said we were going to be here and you loaded up and came out here, and we just hope we didn't miss too many votes until the midnight hours they had last night. I thank you for coming, and I know I speak on behalf of every one here today, and on both sides of the issue. They like someone to talk to who they know who is going to have influence, whether you are for or against the project. The chairman is here, we are very grateful for that opportunity. I have always appreciated your interest in the Lake Andes-Wagner project and the legislation which authorizes the project under the Pick-Sloan Missouri Basin Program. The people of South Dakota have been working long and hard for the development of their abundant natural resources. The Lake Andes-Wagner project is just one continuing step in that direction.

My statement will be brief, because every one in this room knows of my support for the efficient development of our water resources. And, the local sponsors, along with the community members, know what this project can do to the economic viability and

stability of their fragile economy. I sincerely believe that the stabilizing factor of the project speaks louder than the Federal Government's 1944 commitment to our State.

Diversity is the key to our farm economy. The Lake Andes-Wagner irrigation project, when completed, will sustain crops such as potatoes, sweet corn, peas, and celery. The uniqueness of these crops is that they are not surplus crops and can only be grown in this area if irrigation exists.

This is just the beginning, though. Industries can be developed through these specialty crops. Processing and packaging plants will move into this area to prepare the products for the marketplace. This whole idea comes down to jobs and economic stability.

Even more, the project will be able to sustain a stable supply of feed for the family farmers in this area. During times of drought, a project of this type will be able to sustain the income and livelihood of many people.

When the Yankton Sioux Tribe experiences 75 percent unemployment and the outmigration of Charles Mix County people, particularly in the 20- to 45-age group, is high, this project will strengthen the economy of this county and State. We cannot be blind to the economic benefits of such a project. The Lake Andes-Wagner irrigation is not only necessary, but highly viable. My legislation, Senate bill 252, and the House companion, demands our serious consideration and action.

I can't emphasize that strong enough, Mr. Chairman, because we are right this day in the western half of South Dakota witnessing the situation of the tremendous damage that has been sustained through this long drought that they have had out there, and what feed close by could mean. You helped us with the Belle Fourche project, the grounds and the future to be rehabilitated, an extremely favorable factor in saving the cattle herds out in western South Dakota. The things could very well be through here, while this has been a very lush and a very good year for vegetation and crops, we don't always have it that way, and it is nice to know that there is water available, because we can grow about whatever we want to if there is an abundant enough moisture to take care of the growth.

We must focus attention toward these economic benefits. This is my goal, and I sincerely urge the committee to concentrate on these positive economic benefits, Mr. Chairman.

The people here today speak strongly of the merits of the project. They work with the people and the project every day, and their views should be carefully considered.

I appreciate the committee's willingness to come here today. Its been a long time working long and hard for this over the years, I have been involved dating back to the midseventies, to fund the planning studies and further the progress of the project. We are here partially because of the help you have given us in the past and over the years, and I am happy to tell you I think we are ready to authorize this project. Again, I certainly appreciate your coming to South Dakota to give us an opportunity to talk directly to you, Mr. Chairman, thank you.

[The prepared statement of Senator Abdnor follows:]

UNITED STATES SENATE
WATER AND POWER SUBCOMMITTEE
HEARING ON THE
LAKE ANDES-WAGNER IRRIGATION PROJECT

SENATOR JAMES ABDNOR

NOVEMBER 2, 1985

MR. CHAIRMAN, I APPRECIATE YOUR INTEREST IN THE LAKE ANDES-WAGNER PROJECT AND MY LEGISLATION WHICH AUTHORIZES THE PROJECT UNDER THE PICK-SLOAN MISSOURI BASIN PROGRAM. THE PEOPLE OF SOUTH DAKOTA HAVE BEEN WORKING LONG AND HARD FOR THE DEVELOPMENT OF THEIR ABUNDANT NATURAL RESOURCES. THE LAKE ANDES-WAGNER PROJECT IS JUST ONE CONTINUING STEP IN THAT DIRECTION.

MY STATEMENT WILL BE BRIEF BECAUSE EVERYONE IN THIS ROOM KNOWS OF MY SUPPORT FOR THE EFFICIENT DEVELOPMENT OF OUR WATER RESOURCES. AND, THE LOCAL SPONSORS, ALONG WITH THE COMMUNITY MEMBERS, KNOW WHAT THIS PROJECT CAN DO TO THE ECONOMIC VIABILITY AND STABILITY OF THEIR FRAGILE ECONOMY. I SINCERELY BELIEVE THAT THE STABILIZING FACTOR OF THE PROJECT SPEAKS LOUDER THAN THE FEDERAL GOVERNMENT'S 1944 COMMITMENT TO OUR STATE.

DIVERSITY IS THE KEY TO OUR FARM ECONOMY. THE LAKE ANDES-WAGNER IRRIGATION PROJECT, WHEN COMPLETED, WILL SUSTAIN CROPS SUCH AS POTATOES, SWEET CORN, PEAS, AND CELERY. THE UNIQUENESS OF THESE CROPS IS THAT THEY ARE NOT SURPLUS CROPS AND CAN ONLY BE GROWN IN THIS AREA IF IRRIGATION EXISTS.

THIS IS JUST THE BEGINNING THOUGH. INDUSTRIES CAN BE DEVELOPED THROUGH THESE SPECIALITY CROPS. PROCESSING AND PACKAGING PLANTS WILL MOVE INTO THIS AREA TO PREPARE THE PRODUCTS FOR THE MARKET

PLACE. THIS WHOLE IDEA COMES DOWN TO JOBS AND ECONOMIC STABILITY.

EVEN MORE, THE PROJECT WILL BE ABLE TO SUSTAIN A STABLE SUPPLY OF FEED FOR THE FAMILY FARMERS IN THIS AREA. DURING TIMES OF DROUGHT, A PROJECT OF THIS TYPE WILL BE ABLE TO SUSTAIN THE INCOME AND LIVELIHOOD OF MANY PEOPLE.

WHEN THE YANKTON SIOUX TRIBE EXPERIENCES 75 PERCENT UNEMPLOYMENT AND THE OUT-MIGRATION OF CHARLES MIX COUNTY PEOPLE, PARTICULARLY IN THE 20 TO 45 AGE GROUP, IS HIGH, THIS PROJECT WILL STRENGTHEN THE ECONOMY OF THIS COUNTY AND STATE. WE CANNOT BE BLIND TO THE ECONOMIC BENEFITS OF SUCH A PROJECT. THE LAKE ANDES-WAGNER IRRIGATION IS NOT ONLY NECESSARY BUT HIGHLY VIABLE. MY LEGISLATION, S. 252, AND THE HOUSE COMPANION, DEMANDS OUR SERIOUS CONSIDERATION AND ACTION.

WE MUST FOCUS OUR ATTENTION TOWARDS THESE ECONOMIC BENEFITS. THIS IS MY GOAL, AND I SINCERELY URGE THE COMMITTEE TO CONCENTRATE ON THESE POSITIVE ECONOMIC BENEFITS, MR. CHAIRMAN.

THE PEOPLE HERE TODAY SPEAK STRONGLY OF THE MERITS OF THE PROJECT. THEY WORK WITH THE PEOPLE AND THE PROJECT EVERY DAY AND THEIR VIEWS SHOULD BE CAREFULLY CONSIDERED.

I APPRECIATE THE COMMITTEE'S WILLINGNESS TO COME HERE TODAY. I HAVE FOUGHT LONG AND HARD OVER THE YEARS, DATING BACK TO THE MID-1970'S, TO FUND THE PLANNING STUDIES AND FURTHER THE PROGRESS OF THE PROJECT. I SINCERELY BELIEVE THAT WE ARE READY TO AUTHORIZE THIS PROJECT.

Senator MURKOWSKI. Thank you very much, Senator Abdnor. I have one question and it is based on your observation of water projects in your State and the briefing material indicates that the appropriation request would be about $155 million. I think that is based on 1983 estimates. Knowing, or at least observing the cost overruns that traditionally apply on many projects the Government is involved in, I am just wondering what degree of comfort do you have that that is a realistic figure, recognizing inflation factors since the estimates were made, do you feel it is relatively firm?

Senator ABDNOR. That was 1983?

Senator MURKOWSKI. It says here in the book 1984 price estimates. It was $148 million plus an additional $19 million of funds previously expended for features.

Senator ABDNOR. If that project was off the drawing board and ready to go today, and you put it to bid with the kind of industrious people we have out here that want to go to work, and the lack of economic recession we have had, you will probably get some tremendously low bids. If you were to put this maybe in some parts of the country of the United States where a lot of growth, maybe it would be higher, but I think that you will find some very talented people capable of bidding on these contracts who will give us a good figure here as anywhere in the United States and probably the world.

Senator MURKOWSKI. Thank you, I have no further questions, Senator Abdnor. You are certainly welcome to join us at the table and assist in the conduct of the hearing.

Senator ABDNOR. Thank you, I will take you up on that.

Senator MURKOWSKI. Our next witness is Hon. William J. Janklow, Governor of the State of South Dakota. Governor, I wish you good morning. I had an opportunity to greet you outside. It is always a pleasure to see you, and visit, and exchange stories, and, again, I appreciate your forbearance in sending me invitations to your Governor's hunt each year, and one of these days I am going to hit a lucky day and make one. We look forward to your testimony, Governor, and please proceed at your convenience.

STATEMENT OF HON. WILLIAM J. JANKLOW, GOVERNOR, STATE OF SOUTH DAKOTA

Governor JANKLOW. Thank you very much, Senator Murkowski and Senator Abdnor. Speaking for the people of South Dakota, I would like to tell you we all recognize your Senator from the State of Alaska. During your tenure in the U.S. Senate you have been supportive and worked with us in trying to develop the resources in this State. For that, really the people of the State can't vote for you, but they are very appreciative of the work you have done for us.

Senator MURKOWSKI. We have a very short registration in our State for residency, it is only 30 days, Governor.

Governor JANKLOW. When is your primary?

Senator MURKOWSKI. Our primary is August 20.

Governor JANKLOW. The Lake Andes-Wagner project was initiated approximately 20 years ago by the sponsoring landowners without any Government involvement. The landowners formed an irri-

gation district and raised $850,000 to conduct a preliminary, feasibility study. Unfortunately, the irrigation district was unable to secure actual construction funds and the project lost momentum. Nevertheless, strong support for the Lake Andes-Wagner project continued and in 1980 the State decided to aggressively pursue development of the project. In fact, the State has provided $500,000 to conduct an advanced planning study of the project on an accelerated basis. As a matter of fact, I was in a meeting with the Secretary of the Interior, James Watt, and Gary Carruthers and we were discussing water resource development for South Dakota, and at that time I proposed the Lake Andes water project to them which they never heard of in the Federal agencies. They asked me to get them the engineering studies that had previously been done and they said they would show an interest if it seemed feasible, and from that point on this matter has been moving forward for the past 5½ years. As a matter of fact, South Dakota was the first State in the Union to use cost sharing on feasibility studies for Federal water resource development projects. The James River, or I should say the Sundance project, and the Lake Andes-Wagner projects are the first projects in history where a State has cost shared in order to assist the Federal Government with the financing and to at the same time move it along in an expedited manner. The U.S. Bureau of Reclamation participated in the completion of the project investigation and has concluded that the Lake Andes-Wagner project should be constructed as a unit of the Pick-Sloan Program.

The State and Lake Andes-Wagner local project sponsors have done everything within our power to develop this project. We have complied with every Federal requirement to develop an economically beneficial and environmentally sound project. We have substantially contributed to the cost of project study efforts, and we are willing to share in project construction costs if the Federal Government is willing to provide its fair share. We may have to be one of the first in the Nation, we are willing to share in the project construction costs if the Federal Government and the rest of the people of America are willing to provide their fair share. If you understand the Lake Andes-Wagner project, then approval of S. 252 is a very simple and logical decision. Unlike many other States where major corporations own huge farming operations, the Lake Andes-Wagner project consists of small family farmers struggling to survive. The annual income in the area is about $4,000 per capita. This area is heavily dependent on agriculture. Under employment is common, and unemployment among members of the Yankton Sioux Indian Tribe is about 75 percent. The town of Lake Andes has decreased to a population of 1,136, and Wagner to 1,665. They are small and getting smaller due to a lack of economic opportunity in this area. As a matter of fact, Mr. Chairman, you can look around this room at the citizens that are attending this hearing today, you can see what the average age of the citizens are as opposed to many other areas of the country where you would see the young life blood and the new generation of people that would be showing a vital interest in the development in their particular area.

In spite of these dire conditions, the local project sponsors have raised considerable funds to support their project and have designed a project that provides substantial benefit for all concerned. In fact, the project sponsors have raised over $1½ million in order to prepare a planning report in cooperation with the U.S. Bureau of Reclamation. There simply are not many other local project sponsors in the country that can compare to Lake Andes-Wagner in terms of strong local support, initiative and financial commitment. As a result, the Lake Andes-Wagner project will benefit the involved farmers and members of the Yankton Sioux Indian Tribe, the State, and the country as a whole. The project will include a fish impoundment facility that should dramatically increase the percentage of fish that survive to adulthood within the Missouri River. We view this fish impoundment facility as another important part of our program to improve the Missouri River as a fisheries source, and we have submitted a letter of intent to the U.S. Bureau of Reclamation to share in the costs of the facility. Also, the Lake Andes-Wagner project land owners have indicated a willingness to share in the costs associated with establishing new shelter belts as well as replace presently deteriorating shelter belts. Clearly, the Lake Andes-Wagner project will have positive impact on fish and wildlife within the project area.

It should be noted that the State fully recognizes the legitimate concerns of the Yankton Sioux Tribe regarding their participation in the Lake Andes-Wagner project. These concerns must be addressed by both the State and the Federal Government. We want to pursue the Lake Andes-Wagner project in a manner that will benefit the Yankton Sioux Indian Tribe. South Dakota has already entered in to beneficial projects and agreements with other Indian Tribes throughout the State, and we should be able to do likewise with the Yankton Sioux Indian Tribe. We are meeting with representatives from the Yankton Sioux Indian Tribe to reach such agreements, and we certainly expect our efforts to be mutually advantageous. South Dakota has already entered into more beneficial projects and agreements with Indian Tribes in this State than all the other States in the Union combined.

Given this over all understanding of the Lake Andes-Wagner project, there is no doubt that this project should become a unit of the Missouri Basin Pick-Sloan Program. If the Lake Andes-Wagner project is not found worthy of such integration, then the future of the Pick-Sloan Program looks very dark indeed. We must remember that one of the primary goals of the Pick-Sloan Program and the reclamation program in the West was to generate regional economic development through agricultural development for the benefit of the States and the country. Obviously, the goal has yet to be accomplished in South Dakota, and the Lake Andes-Wagner project seems like an excellent place for us to start. Also, we must remember that the Lake Andes-Wagner project is not going to produce surplus crops. In South Dakota we do not have an adequate feed supply for our livestock industry. Again this summer we faced severe rainfall shortages which seriously reduced available feed supplies. Unfortunately, our neighboring States were in no position to provide our feed supply requirements, and many ranchers were forced to sell their cattle at seriously depressed price levels.

Projects like Lake Andes-Wagner can help solve this problem without contributing to national surplus crop problems. In South Dakota we do not have an adequate feed supply for our livestock industry as Senator Abdnor says. Twenty-seven counties in western South Dakota have been declared Presidential disaster areas over the past 3 months. In addition to that, eastern South Dakota this year probably has the largest and the greatest harvest that it has ever had in its history, but South Dakota fortunately or unfortunately happens to lie within the area where the 98th meridian is located. West of the 98th meridian there is a dramatic reduction in the amount of annual moisture. As a matter of fact, eastern South Dakota historically has had approximately 24 inches of moisture on an annual basis, central and western South Dakota approximately 12 inches, almost exactly half. The particular area of the State we are located in now suffers a drought on an average of 3 years out of 10. Seven years out of 10 they are able to get a crop and a good one, and 3 years out of 10 they are not able to get a good crop. Because of not being able to have a sustained livestock feed base, it is not possible to develop a livestock industry in this particular area. Unfortunately, our remaining States are in no position to provide our feed supply requirements, and many ranchers this year are forced to sell off their cattle herds.

Please don't misunderstand our position on the Lake Andes-Wagner project. We are not asking for a Federal subsidy, and we are willing to share in the costs of the project. Even though no one else in America up until the last 2 years has had to share the reclamation project costs. The Federal Government, however, must also be willing to share the wealth it has extracted from the Missouri River and reinvest that wealth in facilities that benefit South Dakota. This expectation is completely consistent with national resources policy. The sharing of extracted wealth with the States from whom the resource has been severed is a firmly established and just principle of American natural resources management law. The Missouri River main stem dams in South Dakota are the largest capital investment ever made in the State. This Missouri River dam system represents the preemption by the Federal Government of our most valuable resource development opportunity. We have received little in return for our national contribution, and we are simply asking to share in the benefits of the Pick-Sloan Program through the method originally envisioned, the construction of water projects through the investment of power revenues in the States where those revenues are generated. The flood control that was taken care of through the building of these dams has not been of significant benefit to South Dakota. The States of Iowa, Nebraska, and Missouri have been the primary beneficiaries of the flood control projects in South Dakota. In order to prevent floods in those States, 530,000 acres of river bottom land were taken from the people of this State, a significant portion of it from the people in this area. That is 816 square miles. We lost more land that is now under the Missouri River system than the entire land area of the State of Rhode Island and the State of Delaware. We have received little in return for this natural contribution and we are simply asking to share in the benefits of this Pick-Sloan Program.

We have waited long enough for Congress to fulfill its responsibility and to share with us the wealth that so many other States like California have enjoyed already. We urge this committee and this Congress to swiftly approve S. 252.

In regard to one additional matter, we would like to again express strong support for the legislation S. 1131 before this committee that would integrate the Hilltop and Gray Goose irrigation projects as units of the Missouri Basin Pick-Sloan Program. S. 1131 should be approved by the committee as soon as possible so that the full U.S. Senate will have an opportunity to act on this noncontroversial bill prior to congressional adjournment this year. We have waited long enough for Congress to provide South Dakota with the benefits intended as part of the Pick-Sloan Program, and Congress could partially rectify this situation by quickly approving S. 1131.

Senator, one additional comment in addition to my prepared remarks. That is that over the course of the examination of these projects it has become obvious that, and you asked the question of Senator Abdnor about the 1983–84 cost. One thing is the size of the project has gone down in size from the time that the project was originally proposed to the Federal Government. It has lost several thousands of acres of originally proposed development. Second of all, and unfortunately, when the Corps of Engineers puts a project together they add 75 percent to the base cost of the project for additional unnamed overhead; 10 percent is unlisted, which then makes it 110 percent of construction costs. Then a 25-percent factor is added to it which is called overhead, and then to the 110 percent plus the 25 percent, another 30 percent is added called contingency.

Frankly, only the National Government would operate with those kinds of budgetary controls, and only the National Government would move forward with any expenditure with 76 percent listed as a contingency basis. We submit we would be able to build that on a State level for probably 30, 40 percent less than the Federal estimate, which the local people could probably build it for 15, 20 percent less than we do. The key thing, I give you one example. When the Federal Government got out of the fish hatchery business in several States, we lost two fish hatcheries. We made a deal with the Secretary of the Interior that rather than object through the Congress and ask for additional money to keep the fish hatchery open, if they would wait until the end of the fiscal year and give it to us in a turnkey operation, we would take it over. This is our second year of operating that hatchery. We have 57 percent more fish production than the Federal Government ever had. We could probably turn it over to the—the bottom line is we can do them cheaper than the Federal Government can do it, but with a 76-percent contingency override, one can understand the incredible costs of these projects.

Just maybe this might be the one project where we start new tradition in America that rather than having the Federal Government actually, with all of its built in inefficiencies, and I don't say that critically, because of its size and the magnitude and scope of this operation, with all of its inefficiencies, just maybe we could save the taxpayers millions and millions and millions of dollars if this was contracted in the State of South Dakota to build these fa-

cilities at a much more reasonable cost that would still take care of the required needs of the people in this area. Thank you very much.

[The prepared statement of Governor Janklow follows:]

STATEMENT OF HON. WILLIAM J. JANKLOW, GOVERNOR, STATE OF SOUTH DAKOTA

Mr. Chairman, the Lake Andes-Wagner project is a sound proposal that deserves to be part of the Missouri Basin Pick-Sloan program. This Committee should immediately approve the Lake Andes-Wagner authorization legislation (S. 252).

The Lake Andes-Wagner project was initiated approximately 20 years ago by the sponsoring landowners without any government involvement. The landowners formed an irrigation district and raised $850,000 to conduct a preliminary feasibility study. Unfortunately, the irrigation district was unable to secure actual construction funds and the project lost momentum. Nevertheless, strong support for the Lake Andes-Wagner project continued and in 1980 the state decided to aggressively pursue development of the project. In fact, the state has provided $500,000 to conduct an advanced planning study of the project on an accelerated basis. In addition, I met with U.S. Interior Department officials to explain the project, emphasize the strong existing support for it, and to remind the federal government of its obligation to the state in accordance with the Pick-Sloan Missouri Basin program. Subsequently, the U.S. Bureau of Reclamation has participated in the completion of project investigations and has concluded that the Lake Andes-Wagner project should be constructed as a unit of the Pick-Sloan program.

The state and Lake Andes-Wagner local project sponsors have done everything within our power to develop this project. We have complied with every federal requirement to develop an economically beneficial and environmentally sound project. We have substantially contributed to the cost of project study efforts, and we are willing to share in project construction costs if the federal government is willing to provide its fair share.

If you understand the Lake Andes-Wagner project, then approval of S. 252 is a very simple and logical decision. Unlike many other states where major corporations own huge farming operations, the Lake Andes-Wagner project consists of small family farmers struggling to survive. The annual income in the area is about $4,000 per capita. This area is heavily dependent on agriculture, under-employment is common, and unemployment among members of the Yankton Sioux Indian Tribe is about 75 percent. The towns of Lake Andes (population 1,136) and Wagner (population 1,665) are small and getting smaller due to the lack of economic opportunity.

In spite of these dire conditions, the local project sponors have raised considerable funds to support their project and have designed a project that provides subtantial benefit for all concerned. In fact, the Lake Andes-Wagner local project sponsors have raised over $1.5 million in order to prepare a planning report in cooperation with the U.S. Bureau of Reclamation. There simply are not many other local project sponsors in the country that can compare to Lake Andes-Wagner in terms of strong local support, initiative and financial commitment. As a result, the Lake Andes-Wagner project will benefit the involved farmers and members of the Yankton Sioux Indian Tribe, the state, and the country as a whole. In addition, the Lake Andes-Wagner project will enhance the environment. The project will include a fish impoundment facility that should dramatically increase the percentage of fish that survive to adulthood within the Missouri River. We view this fish impoundment facility as another important part of our program to improve the Missouri River as a fisheries resource, and we have submitted a letter of intent to the U.S. Bureau of Reclamation to share in the costs of the facility. Also, the Lake Andes-Wagner project landowners have indicated a willingness to share in the costs associated with establishing new shelterbelts as well as replace presently deteriorating

shelterbelts. Clearly, the Lake Andes-Wagner project will have positive impact on fish and wildlife within the project area.

It should be noted that the state fully recognizes the legitimate concerns of the Yankton Sioux Tribe regarding their participation in the Lake Andes-Wagner project. These concerns must be addressed by both the state and the federal government. We want to pursue the Lake Andes-Wagner project in a manner that will benefit the Yankton Sioux Indian Tribe. South Dakota has already entered into beneficial projects and agreements with other Indian Tribes throughout the state, and we should be able to do likewise with the Yankton Sioux Indian Tribe. We are meeting with representatives from the Yankton Sioux Indian Tribe to reach such agreements, and we certainly expect our efforts to be mutually advantageous.

Given this overall understanding of the Lake Andes-Wagner project, there is no doubt that this project should become a unit of the Missouri Basin Pick-Sloan program. If the Lake Andes-Wagner project is not found worthy of such integration, then the future of the Pick-Sloan program looks very dark indeed. We must remember that one of the primary goals of the Pick-Sloan program and the reclamation program westwide was to generate regional economic development through agricultural development for the benefit of the states and the country. Obviously, that goal has yet to be accomplished in South Dakota, and the Lake Andes-Wagner project seems like an excellent place for us to start. Also, we must remember that the Lake Andes-Wagner project is not going to produce surplus crops. In South Dakota, we do not have an adequate feed supply for our livestock industry. Again this summer we faced severe rainfall shortages which seriously reduced available feed supplies. Unfortunately, our neighboring states were in no position to provide our feed supply requirements and many

ranchers were forced to sell their cattle at seriously depressed price levels. Projects like Lake Andes-Wagner can help solve this problem without contributing to national surplus crop problems.

Please do not misunderstand our position on the Lake Andes-Wagner project. We are not asking for a federal subsidy, and we are willing to share in the costs of the project. The federal government, however, must also be willing to share the wealth it has extracted from the Missouri River and reinvest that wealth in facilities that benefit South Dakota. This expectation is completely consistent with national resources policy. The sharing of extracted wealth with the states from whom the resource has been severed is a firmly established and just principle of American natural resources management law. The Missouri River mainstem dams in South Dakota are the largest capital investment ever made in the state. This Missouri River dam system represents the pre-emption by the federal government of our most valuable resource development opportunity. We have received little in return for our national contribution, and we are simply asking to share in the benefits of the Pick-Sloan program through the method originally envisioned - the construction of water projects through the investment of power revenues in the states where those revenues are generated.

We have waited long enough for Congress to fulfill its responsibility and to share with us the wealth that so many other states like California have enjoyed already. We urge this Committee and this Congress to swiftly approve S. 252.

In regard to another matter, we would like to again express strong support for the legislation (S. 1131) before this Committee that would integrate the Hilltop and Gray Goose irrigation projects as units of the Missouri Basin Pick-Sloan program. S. 1131 should be approved by the Committee as soon as possible so that the full U.S. Senate will have an opportunity to act on this non-controversial bill prior to Congressional adjournment this year. We have waited long enough for Congress to provide South Dakota with the benefits intended as part of the Pick-Sloan program, and Congress could partially rectify this situation by quickly approving S. 1131.

Senator MURKOWSKI. Thank you very much, Governor. I think in your statement you indicated that the Corps of Engineers would be the agency——

Governor JANKLOW. Bureau of Reclamation, I am sorry. I meant Bureau of Reclamation.

Senator MURKOWSKI. There have been precedents set where the Corps of Engineers has turned over their design criteria to other States in lieu of Federal funding of the project. I am inclined to think realistically that the Federal agencies would be very reluctant to turn over to the private sector or to the State their oversight and functional responsibility, because I don't differ with you, I think if you were able to contract for the project rather than the Federal Government, you could do it a lot cheaper, but then the inference would be well, we don't need this particular agency to carry the overhead and capability that it does, because it has the charter responsibility. My only point is while I agree with you, realistically these are awfully difficult things to accomplish, because that bureaucracy rolls in such a way that it controls the funding and it wants to be the agency that is involved in the actual planning and construction, and as a consequence when they throw a 76-percent factor in there, why that is to make sure that they don't have any egg on their face when the project is through. That is indeed unfortunate, but as you and I talked about the guy that drops a little asphalt to check the frost heaves or whatever it is, why he has got to wear a hard hat, it takes him all day. A couple of other questions, Governor. In your opening statement you referred to the specific advantages that would be provided in I guess job opportunities for the Yankton Sioux Tribe in the fact that the land would be more productive and generate more economic opportunity. I gather from my briefing notes that the tribe maybe opposed the project. Would you enlighten us for the record?

Governor JANKLOW. I don't believe at this point in time the tribe has a firm position. I know they have indicated at points in time they would be opposed to it. There has been also indications in the past that they would support it. I had a meeting with the tribal chairman and some of the tribal council officials approximately 3 weeks ago in my office. At that time we had a very detailed discussion of the various aspects of development of the whole area, including the Yankton Sioux Tribal grounds. The agreement was, because I had to take a trip to Israel and do some other things, that we would be together in approximately 3 or 4 weeks, that we would sit down and work this out, and it was the very candid expression of the tribal chairman that he felt we would be able to resolve any differences that we have. Very candidly, our differences with the tribe really evolve around Lake Andes. There is a dispute that is currently in the Eighth Circuit Court of Appeals as to who owns the lakebed of Lake Andes, whether it be the State of South Dakota or whether or not the tribe has its aboriginal title which has never been extinguished. That particular conflict is causing an impediment to the working relationship with our two governments. It is set for negotiation and also set for argument in the eighth circuit. Some of this water would flow into Lake Andes, but Lake Andes is a lake which is about 5,000 acres or larger which also over the past decade has completely dried up almost, and become a

lakebed or a dry bed, and that is what precipitated the dispute, is different people want to go out there and cut the weeds and the hay that were growing for livestock during the drought shortage and that precipitated litigation, but I honestly anticipate, and I am serious, that we will be able to internally solve those issues within South Dakota and present a united front sometime within the next 60 days to the Congress.

Senator MURKOWSKI. I hope your optimistic forecast of settlement is realistic having had some experience with native claims. It seems the first thing it amounts to is a full employment act for attorneys. As a consequence of that, more often than not——

Governor JANKLOW. There is a place where you can raise national revenues.

Senator MURKOWSKI. Governor, one other question. You, in your presentation indicated the advantage to fish and game environments and the advantage of or advantages associated with the Lake Andes-Wagner project enhancing the environment. Yet, I understand from a summary here that there is opposition or has been from some of the environmental agencies, Sierra Club, and others. I am wondering if you would care to comment.

Governor JANKLOW. Some of those environmental agencies have opposed everything that has been tried to be done since Columbus landed in America in 1492. The one thing that some of these environmental agencies, or groups, or whatever you want to call them, refuse to understand is the American farmer and the people that live on the land do a better job of taking care of it than any organization made up of people of good will or any government ever has. We talk about wildlife, but when we get our blizzards it is our farmers and ranchers that feed the deer, it is our farmers and ranchers that keep the pheasants alive, it is our farmers and ranchers and local people that go out and make sure the geese and the ducks get stirred up so they can head south when our climatic conditions require it, and yet we still have all of these outside assisters coming in, some of whom live in South Dakota, to always tell us there is a better way to do it.

For some of these people they would still wish the automatic transmission had never been invented, because somehow it would cause some kind of destruction of the human soul. I can't always relate to that, but I can tell you that this project, if it is built, will have as a very major ingredient and feature the rebuilding of shelter belts, the forestation of lands that are not forested now, the building of a fish impoundment station, the utilization of the State's fish hatchery which we spent millions at our own expense to build. We have the most modern fish hatchery in the lower 48 States. The most modern facility in the lower 48 States to continuously stock like we do with millions of salmon and walleye in the past, and these other things in the Missouri River and its tributaries right now. Finally, I think it is really important to recognize that in waiting for some of this wildlife development and river development we got tired of waiting for the National Government, and I went in with the assistance of Senator Abdnor, had a meeting with Mr. Gianelli, who was the Assistant Secretary of the Army for the Corps of Engineers, and I said to him we can't wait for the Feds to fund these things, we have waited 23 years. You

always want to design them to your standards which will last 10,000 years and we have a shorter span in mind. He said you want to pay for a lot of it, you go build it in the way you want to and we will cost share with you. This is something that was never done before. The net result is over the last 3 years we have had almost 9 million dollars' worth of recreation and wildlife development enhancement done on the Missouri River with the State of South Dakota paying all the cost up front, doing our design work and our implementation, and then the Federal Government through the corps paying us back at the rate of 50 cents on the dollar. So, now the work is done, we are all having the benefit of it, which is the increased enhancement, and that I believe is the third largest agency in this State, the third largest agency in our Government is the Game, Fish and Parks Department. South Dakota has more State parks than any State in the Union. There are States with larger parks, including yours, Senator, but there are none that have more. As large and remote as this State is, you cannot drive at 55 miles an hour, which very few of us do, but you cannot drive at 55 miles an hour in any direction in South Dakota and not be at a State park in 1 hour. The final thing I will say is just over the last year our legislature created a new State park less than 15 miles from here in order to continue that type of development at our expense. So, I know that these people object, but they object to everything that is done in America nowadays, and the final analysis is it is great to take care of wildlife, it is great to take care of fish, and it is great to take care of the environment, but we have also got to take care of the people that live here as well as those other things. We can all live compatibly together, we couldn't have built Mount Rushmore under today's environmental rules, yet that beautiful shrine to democracy is the indication that nature and man can cohabitate together today. The pipeline where you live is an example that man and nature can live together. The same thing in this case, we have to live here, we are not going to wreck the place, not if we have to live here, not the people that object. We just never see those people unless there is some development proposed someplace, so those people wish the whole State as a swamp so we could raise ducks, so under the Federal treaty we could let Mexico have them so they could slaughter them when they get down there.

Senator MURKOWSKI. Thank you very much, Governor. I have heard the theme of that message from other Governors, and it will be interesting to——

Governor JANKLOW. Just don't ratify any more treaties. Thank you very much.

Senator MURKOWSKI. It will be interesting to hear the witnesses that support the environmental issues.

Governor JANKLOW. Senator Abdnor, thank you very much.

Senator MURKOWSKI. Thank you, Governor, and we look forward to seeing you again. The Honorable Tom Daschle will be represented by Mr. Ross Haepul, and we look forward to your presentation, Mr. Haepul, and you may proceed.

STATEMENT OF HON. THOMAS A. DASCHLE, A U.S. REPRESENTATIVE FROM THE STATE OF SOUTH DAKOTA, AS PRESENTED BY ROSS HAEPUL

Mr. HAEPUL. Chairman Murkowski and members of the subcommittee, I welcome and appreciate the opportunity to testify in favor of the authorization of the Lake Andes-Wagner irrigation project. I want to extend a special thanks to Senator Murkowski to come to Wagner today for this important hearing. We are pleased to have this opportunity to tell you about what we feel is one of the very finest Bureau of Reclamation projects in the country.

On October 25, 1985, I appeared in Wagner to testify in favor of my bill H.R. 584, which would authorize the construction of the Lake Andes-Wagner irrigation project. At that hearing a number of people explained to Chairman George Miller the importance of water development in South Dakota, and the merits of the Lake Andes-Wagner project in particular. Today we will have time to hear from only a small fraction of the number of South Dakotans supporting this project. I can assure you, however, there are many thousands of other citizens who know how crucial water development is to the future of the State.

Mr. Chairman, I can assure you that South Dakotans are fully supportive of efforts to reduce the Federal budget deficit by eliminating wasteful Government spending. But we also understand that when the pressure to cut Federal spending is high, many lawmakers become shortsighted and are tempted to thoughtlessly reject anything new and innovative, sometimes at the expense of the long-term interest of the country. I urge the subcommittee to consider the lasting benefits of this model project, which will pay for itself and give back total benefits many times its cost. I firmly believe that we can cut the fat from Federal programs and still have the ability to finance essential projects like this one whose enduring merit is so evident.

If anyone questions whether the Federal Government can afford to fund this project during a time of fiscal restraint, they should consider the cost of drought. According to one estimate, the value of South Dakota production was reduced by nearly $3 billion between 1976 and 1982 as a result of drought. Add tne value of disaster assistance provided to drought victims and the economic expense of drought is better understood.

Mr. Chairman, South Dakota is not asking for a handout or special treatment from the Federal Government. We ask only that the Federal Government begin to fulfill a longstanding commitment established in 1944 with the passage of the Flood Control Act and the Pick-Sloan Missouri River Basin Program. The four goals of this comprehensive legislation were improved flood control, hydroelectric power production, enhanced navigational capacity, and irrigation development. To accomplish these objectives, between 1946 and 1968, five main stem dams and reservoirs were constructed on the Missouri River, four of which are located in this State. As a direct consequence of the construction of these dams, more than 520,000 acres of prime agricultural lands were flooded, and removed from production forever. The authors of the Pick-Sloan plan, however, had the foresight to provide fair compensation for this

permanent loss, envisioning irrigation development for more than 960,000 acres.

We are all aware of the monumental achievement of the Pick-Sloan plan. Increased navigational capacity has allowed a tenfold increase in annual commercial tonnage. Billions of dollars in flood damage in downstream States have been avoided. Approximately $1.4 billion in power revenues have been realized due to the 2,100 megawatts of hydroelectric generating capacity of the main stem dams. In three of the four Pick-Sloan objectives, the program can be considered an unqualified success.

Missing from this list of impressive accomplishments, however, is the promised irrigation development in the upper reaches of the Missouri River Valley. South Dakota, who sacrificed the most in achieving these successes has received only 2 percent of the irrigation development owed to her, and ranks next to last in terms of total irrigation acreage. The Federal Government seems to have ignored its commitment to irrigation development in South Dakota, the last piece of the Pick-Sloan plan.

Mr. Chairman, neither I nor the people of South Dakota have forgotten the commitment made 41 years ago by the Federal Government. We are hopeful that the authorization of this worthy project will be the first small step toward fulfilling that obligation at long last.

Two decades ago similar hearings were held in Wagner on a very different version of the Lake Andes-Wagner project than we have before us today. At that time, the citizens of Charles Mix objected to the lack of sensitivity to wildlife preservation concerns. Learning an important lesson, the project sponsors have now formulated a very different plan. After exhaustive planning and study with input from all locally and nationally affected individuals, the project sponsors have formulated one of the very finest Bureau of Reclamation projects in the country. In the planning process, State and local sponsors have probably contributed more to the financing of the preliminary planning reports than any other project in the Nation. That is a clear indication of the strong commitment of the people of South Dakota to the Lake Andes-Wagner project.

Environmental concerns of yesteryear have been adequately addressed, with thousands of acres set aside to compensate for losses of wildlife habitat. Some 1,320 acres of wetlands, 175 acres of woodlands, and 2,180 acres of grasslands will be enhanced as a part of this model project, all at the expense of the project beneficiaries. Charles Mix County is known as one of the finest hunting and fishing areas anywhere in the country. Its residents are extremely interested in maintaining and enhancing the abundant fish and wildlife population. To do that, landowners have indicated a willingness to share costs with the Federal Government to replace deteriorated shelter belts and establish new ones. In addition, they are working in cooperation with the South Dakota Department of Game, Fish and Parks on a 50-acre fish impoundment pound to stock area bodies of water with northern pike, walleye, white crappy, smallmouth bass, and bluegill. The Lake Andes-Wagner project sponsors have not hidden from environmental concerns raised in the planning stages. They have addressed those concerns and have devised

a plan that preserves the delicate environmental balance of the project area.

To see an example of the economic impact irrigation can have on an area one need only travel a few miles north to the Grass Rope irrigation project. This summer, in the midst of one of the worst droughts since the dust bowl years, the Grass Rope project area looked like a lush oasis surrounded by a desert. Since its construction in 1976, Grass Rope's profits have steadily increased, providing $405,000 last year, at a time when scores of other producers in the area were going out of business.

We are not so naive as to believe irrigation development is the panacea for problems down on the farm. However, we do know irrigation development can inject badly needed stability in to what is currently a very volatile business.

The argument has been made that the Federal Government should not be in the business of providing funding for the production of commodities currently in surplus. But this viewpoint ignores the fact that a large percentage of the feed grains produced in this area do not show up on the market; they stay on the farm to feed livestock, a commodity that is not a surplus. It also ignores the undeniable fact that irrigation allows the producer to get away from the continued production of surplus products by creating the capability to grow specialty crops like potatoes, sweetcorn, peas, celery, and other products which are not over abundant in the market. Diversification of the crop is one of the keys to an economic recovery in the agricultural sector, and irrigation development will pave the way for such diversification.

Other less direct benefits will result from the construction of the Lake Andes-Wagner project. Several community groups are currently working on proposals to establish a frozen food processing plant for potatoes, sweetcorn, peas and a birdseed packaging plant in anticipation of the availability of those specialty products with the arrival of the irrigation project.

Local support of a project is sometimes an issue in irrigation. The Lake Andes-Wagner project has been initiated and nurtured by the local people themselves. When concerns have been raised, the project sponsors have bent over backward to address them, because the high degree of local involvement, local support for the project is wide spread and strong.

Chairman Murkowski, I again appreciate this opportunity to testify before your subcommittee today in support of the Lake Andes-Wagner irrigation project. I and my colleagues in the House look forward to working in cooperation with you and the other members of your subcommittee to authorize the Lake Andes-Wagner irrigation project.

[The prepared statement of Mr. Daschle follows:]

Statement of Hon. Thomas A. Daschle, a U.S. Representative From the State of South Dakota

Chairman Murkowski and members of the Subcommittee, I welcome and appreciate the opportunity testify in favor of the authorization of the Lake Andes-Wagner Irrigation project. I want to extend a special thanks to Senator Murkowski to come to Wagner today for this important hearing. We are pleased to have this opportunity to tell you about what we feel is one of the very finest Bureau of Reclamation projects in the country.

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Mr. Chairman, I can assure you that South Dakotans are fully supportive of efforts to reduce the federal budget deficit by eliminating wasteful government spending. But we also understand that when the pressure to cut federal spending is high, many lawmakers become short-sighted and are tempted to thoughtlessly reject anything new and innovative, sometimes at the expense of the long-term interest of the country. I urge the Subcommittee to consider the lasting benefits of this model

project, which will pay for itself and give back total benefits many times its cost. I firmly believe that we can cut the fat from federal programs and still have the ability to finance essential projects like this one whose enduring merit is so evident.

It anyone questions whether the federal government can afford to fund this project during a time of fiscal restraint, they should consider the cost of drought. According to one estimate, the value of South Dakota production was reduced by nearly $3 billion between 1976 and 1982 as a result of drought. Add the value of disaster assistance provided to drought victims and the economic expense of drought is better understood.

Mr. Chairman, South Dakota is not asking for a handout or special treatment from the federal government. We ask only that the federal government begin to fulfill a longstanding commitment established in 1944 with the passage of the Flood Control Act and the Pick-Sloan Missouri River Basin Program. The four goals of this comprehensive legislation were improved flood control, hydroelectric power production, enhanced navigational capacity, and irrigation development. To accomplish these objectives, between 1946 and 1968 five main stem dams and reservoirs were constructed on the Missouri River, four of which are located in this state. As a direct consequence of the construction of these dams, more than 520,000 acres of prime agricultural lands were flooded, and removed from production forever. The authors of the Pick-Sloan plan, however, had the foresight to provide fair compensation for this permanent loss, envisioning irrigation development for more than 960,000

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Mr. Chairman, neither I nor the people of South Dakota have forgotten the commitment made forty-one years ago by the federal government. We are hopeful that the authorization of this worthy project will be the first small step toward fulfilling that obligation at long last.

Two decades ago similar hearings were held in Wagner, on a very different version of the Lake Andes-Wagner project than we have before us today. At that time, the citizens of Charles Mix objected to the lack of sensitivity to wildlife preservation concerns. Learning an important lesson, the project sponsors have now

formulated a very different plan. After exhaustive planning and study with input from all locally and nationally affected individuals, the project sponsors have formulated one of the very finest Bureau of Reclamation projects in the country. In the planning process, state and local sponsors have probably contributed more to the financing of the preliminary planning reports than any other project in the nation. That is a clear indication of the strong commitment of the people of South Dakota to the Lake Andes-Wagner project.

Environmental concerns of yesteryear have been adequately addressed, with thousands of acres set aside to compensate for losses of wildlife habitat. Some 1320 acres of wetlands, 175 acres of woodlands, and 2180 acres of grassland will be enhanced as a part of this model project, all at the expense of the project beneficiaries. Charles Mix County is known as one of the finest hunting and fishing area anywhere in the country. Its residents are extremely interested in maintaining and enhancing the abundant fish and wildlife populations. To do that, landowners have indicated a willingness to share costs with the federal government to replace deteriorated shelterbelts and establish new ones. In addition, they are working in cooperation with the South Dakota Department of Games, Fish, and Parks on a 50-acre fish impoundment pound to stock area bodies of water with northern pike, walleye, white crappie, small mouth bass, and blue gill. The Lake Andes-Wagner project sponsors have not hidden from environmental concerns raised in the planning stages. They have addressed those concerns and have devised a plan that preserves the delicate environmental balance of the project area.

To see an example of the economic impact irrigation can have on an area one need only travel a few miles north to the Grassrope Irrigation project. This summer, in the midst of one of the worst droughts since the Dust Bowl years, the Grassrope project area looked like a lush oasis surrounded by a desert. Since its construction in 1976, Grassrope's profits have steadily increased, providing $405,000 last year, at a time when scores of other producers in the area were going out of business.

We are not so naive as to believe irrigation development is the panacea for problems down on the farm. However, we do know irrigation development can inject badly needed stability into what is currently a very volatile business.

The argument has been made that the federal government should not be in the business of providing funding for the production of commodities currently in surplus. But this viewpoint ignores the fact that a large percentage of the feed grains produced in this area do not show up on the market; they stay on the farm to feed livestock, a commodity that is not is surplus. It also ignores the undeniable fact that irrigation allows the producer to get away from the continued production of surplus products by creating the capability to grow specialty crops like potatoes, sweet corn, peas, celery, and other products which are not overabundant in the market. Diversification of the crops is one of the keys to an economic recovery in the agricultural sector, and irrigation development will pave the way for such diversification.

Other, less direct benefits will result from the construction of the Lake Andes-Wagner project. Several community groups are

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currently working on proposals to establish a frozen food processing plant for potatoes, sweet corn, peas and a bird seed packaging plant in anticipation of the availability of those specialty products with the arrival of the irrigation project.

Local support of a project is sometimes an issue in irrigation. The Lake Andes-Wagner project has been initiated and nutured by the local people themselves. When concerns have been raised, the project sponsors have bent over backwards to address them. Because of the high degree of local involvement, local support for the project is widespread and strong.

Chairman Murkowski, I again appreciate this opportunity to testify before your Subcommittee today in support of the Lake Andes-Wagner Irrigation project. I and my colleagues in the House look forward to working in cooperation with you and the other members of your Subcommittee to authorize the Lake Andes-Wagner Irrigation project.

Senator MURKOWSKI. Thank you very much, Mr. Haepul. We very much appreciate your statement of Congressman Daschle and we think it will contribute significantly to the record. You made an excellent presentation and we wish you good day. Our next witness will be Mr. Robert H. Madsen, Regional Planning Officer, Upper Missouri Region, Bureau of Reclamation, Billings, MT. Mr. Madsen, we look forward to your presentation, we welcome you to the hearing.

STATEMENT OF ROBERT H. MADSEN, REGIONAL PLANNING OFFICER, UPPER MISSOURI REGION, BUREAU OF RECLAMATION, BILLINGS, MT, ACCOMPANIED BY JOHN LAWSON

Mr. MADSEN. Senator Murkowski, Senator Abdnor. We appreciate this opportunity to discuss the technical aspects of the Lake Andes-Wagner unit. The planning process for the investigations of the Lake Andes-Wagner is nearing completion. The planning report and final environmental statement has been filed with the Environmental Protection Agency and the required 30-day waiting period concluded on October 28. The Commissioner of Reclamation may now make the decision to send the planning report/environmental statement to the Secretary of the Interior for his approval and transmittal, through the Office of Management and Budget, to the Congress. Until these actions are complete, we can make no recommendation on the unit.

The potential Lake Andes-Wagner unit would be a 45,000-acre irrigation project. Water for the project would be provided from Lake

Francis Case behind Fort Randall Dam. This unit would be developed as part of the Pick-Sloan Missouri Basin Program.

I would like to give some background about this project before I discuss the specifics of the plan proposed by S. 252. Studies in this area have been relatively active for a number of years. Our first investigation in the area was completed in 1966 and updated in 1972. Those early studies showed a development was feasible but drainage costs were relatively high. Because it lacked strong State and local support, the study was administratively concluded. Then in 1976, the Lake Andes-Wagner Irrigation District hired a private consultant to assess the potential for non-Federal irrigation development of the area. The district elected not to proceed with this proposal in 1978 because of the high cost of private financing.

In 1979, during Reclamation's study of the lower James and Fort Randall water diversion proposal, the Lake Andes-Wagner Irrigation District requested that reclamation reformulate the unit in an attempt to develop an acceptable plan, and we initiated our present planning studies.

The study area is broken into two sections—west and east of Choteau Creek. Initially, due to funding and time constraints, the project sponsors elected to include only those lands west of Choteau Creek in the planning study. As the west Choteau Creek planning studies progressed, it became increasingly evident that there was considerable interest in irrigating lands east of Choteau Creek. Therefore, the local sponsors obtained a loan from the State of South Dakota to study the lands east of Choteau Creek. The legislation before the Congress at this time would authorize the development of the irrigable acres both west and east of Choteau Creek for a total of 45,000 acres. This irrigable area includes about 1,700 acres of Yankton Sioux tribal lands.

The project land would be irrigated with sprinkler systems, mostly center pivots. The annual diversion for the project would be 94,000 acre-feet. This is about one-half percent of the annual releases from Fort Randall Dam. This water would be pumped by the main pumping plant—the North Bay pumping plant—located on the arm of Lake Francis Case called North Bay. This site is about 3 miles south and 1 mile west of the town of Lake Andes. This plant would be an outdoor type with a rated capacity of 737 cubic feet per second, and a total dynamic head of 230 feet. Six 54-inch diameter steel intake pipes would extend into North Bay. Fish screens would be placed on the ends of the intake pipes. These screens have small openings, 0.25 inches, and waterflow velocities are only 0.5 foot a second. Those factors, coupled with a depth over the screens of at least 20 feet during fish spawning and rearing would minimize loss of fish.

Water would be pumped from the pumping plant into the main canal for delivery to project lands. This 16-mile-long canal would have an initial capacity of 710 cubic feet per second. The canal will traverse a side hill in a northeasterly direction for about the first 6½ miles of its route and then continue in an easterly direction until it branches about 2 miles southeast of Ravinia. North Branch canal would flow north. The main canal would continue eastward and would branch again where southeast Choteau Canal begins. From here the canal would parallel section lines to the Wagner

relift pumping plant. Six large relief pumps would be needed to serve lands in those areas which are higher than the canal—one near the northern end of the project area, one near Wagner, three to serve the lands east of Choteau Creek, and one to serve the lands on the northwest side of Lake Andes. There would also be 10 smaller relift plants and a drainage system. This system of surface and subsurface drains would remove excess water and return flows from the project area. An irrigation management system is a part of the plan to increase efficiencies and limit application of water. Installation of subsurface drains would be deferred until they are needed, which could range from 5 to 40 years.

As part of the project, the South Dakota Department of Game, Fish and Parks will cost-share construction of a fish rearing pond on North Bay for enhancement of the Lake Francis Case fishery.

Wildlife habitat losses due to development of the project would be fully mitigated. The important habitat types of the area are woodlands, multirow shelter belts, wetlands, and grasslands. To mitigate wetland losses, up to 2,700 acre-feet of water would be provided to Red Lake and up to 1,400 acre-feet of water to Owens Bay. Water delivery to the wetlands would be under the direction of the refuge managers. Management of water levels would allow wildlife managers to control aquatic vegetation and thereby enhance broad habitat and improve nesting conditions. This would increase their value as wildlife areas.

In addition, 4 acres of wetland easements would be acquired, and 365 acres of existing wetlands would be purchased and provided a controlled water supply. Where possible, those wetlands would be purchased in conjunction with grassland and woodlands to create wildlife complexes which would be managed by the U.S. Fish and Wildlife Service, and South Dakota Department of Game, Fish and Parks. To mitigate for woodlands and grasslands, about 2,350 acres would be purchased, planted, and managed. Canal and lateral rights-of-way would be seeded to native grasslands.

The diversion of water for the project and return flows would have no significant effect on Lake Francis Case or the Missouri River. Return flows would accrue to Lake Andes and Choteau Creek. Measures would be taken to assure State total dissolved solids [TDS] water quality standards are met. Lake Andes only stores water during periods of high runoff and is dry 1 out of 20 years. The water quality varies from 550 to 6,400 milligrams per liter of TDS. About 6,175 acre-feet of project return flows would enter Lake Andes each year. From October through April, the return flows would be about 2,900 milligrams per liter TDS. Therefore, Lake Francis Case water would be provided to dilute the return flows to meet State standards. There is ample capacity in the canals to provide up to 150 acre-feet per day during offpeak irrigation periods.

Choteau Creek is an intermittent stream. About 23,600 acre-feet of return flow would enter Choteau Creek. Summer water quality would not be altered. Because return flows could average 2,900 milligrams per liter TDS, a 1,450 acre-feet ring dike would be constructed along Choteau Creek to store water for dillution purposes. This water would be released from the dike during low flow winter months to meet the State water quality standard. It is anticipated

that construction of this dike would be deferred until the first subsurface drains are functioning, or about 5 years.

The total cost of the project is $150 million.

One item I have not addressed is providing water to Lake Andes for recreation and fish and wildlife enhancement. There would be excess capacity available in the project supply works—except during the peak irrigation season—to deliver water to enhance and maintain Lake Andes. However, ownership of this lake bed is currently in litigation between the State of South Dakota and the Yankton Sioux Tribe. Negotiations are progressing, and when resolved, consideration could be given to providing water to Lake Andes.

In summary, we have enjoyed working jointly with the State, the project sponsors, and Yankton Sioux Tribe toward a common goal—a plan that is acceptable to all.

[The prepared statement of Mr. Madsen follows:]

Technical Statement of Robert H. Madsen
Regional Planning Officer, Upper Missouri Region
Bureau of Reclamation
Before the Senate Energy Subcommittee on Water and Power
Field Hearing, Wagner, South Dakota, S. 252

November 2, 1985

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I would like to direct your attention to the map on the board and I will briefly describe the project features.

The project land would be irrigated with sprinkler systems, mostly center pivots. The annual diversion for the project would be 94,000 acre-feet. This is about ½ percent of the annual releases from Fort Randall Dam. This water would be pumped by the main pumping plant--the North Bay Pumping Plant--located on the arm of Lake Francis Case called North Bay. This site is about 3 miles south and ¼ mile west of the town of Lake Andes. This plant would be an outdoor-type with a rated capacity of 737 cubic feet per second and a total dynamic head of 230 feet. Six 54-inch-diameter steel intake pipes would extend into North Bay. Fish screens would be placed on the ends of the intake pipes. These screens have small openings (0.25 inches) and waterflow velocities are only 0.5 foot a second. Those factors coupled with a depth over the screens of at least 20 feet during fish spawning and rearing, would minimize loss of fish.

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The total cost of the project is $150,000,000.

One item I have not addressed is providing water to Lake Andes for recreation and fish and wildlife enhancement. There would be excess capacity available in the project supply works - except during the peak irrigation season - to deliver water to enhance and maintain Lake Andes. However, ownership of this lakebed is currently in litigation between the State of South Dakota and the Yankton Sioux Tribe. Negotiations are progressing and when resolved, consideration could be given to providing water to Lake Andes.

In summary, we have enjoyed working jointly with the State, the project sponsors, and Yankton Sioux Tribe toward a common goal--a plan that is acceptable to all.

LAKE ANDES-WAGNER COMPARATIVE BENEFIT EVALUATION

An alternative benefit analysis, as provided for in the Principles and Guidelines (P&G), was used to assess the project. The standard P&G benefit evaluation is called "P&G Evaluation" and the alternative analysis is called the "Alternative Evaluation." The Alternative Evaluation provides a more accurate estimate of National Economic Development (NED) irrigation benefits.

The difference in the two evaluations is mainly in crop distribution, livestock, prices received and return to farm management. The following illustrates the effects of the Alternative Evaluation on the measurement of benefits as compared to the P&G Evaluation.

Direct User Benefits, Alternative Evaluation	$13,095,000
Effect of Specialty Crop (potatoes)	-3,105,000
Effect of Livestock	-945,000
Effect of long-term price normalization	-1,173,000
Effect of management charge	-402,000
Direct User Benefits, P&G Evaluation	$7,470,000

Attached is a summary of the comparative analysis that provides an explanation of the changes and Table 9 from the Planning Report/FES that displays the NED comparison between the P&G and the Alternative Evaluations.

Lake Andes-Wagner Unit

Summary of Comparative Analysis

Item	P&G Evaluation	Alternative Evaluation	Explanation for Change
Crop Distribution	Basic crops, primarily corn and small grains	Some specialty crops are included.	Data gathered from the local area and adjacent areas indicates that specialty crops could eventually reach 25 percent. Potatoes are the likely crop, a maximum of 5,625 acres (12.5 percent) is considered for NED benefits. A marketing analysis shows that this will not decrease production from other marketing areas.
Livestock	Livestock are included only to the extent allowed in the P&G.	Same as P&G.	This area qualifies as a geographically isolated area. The benefits claimed do not exceed the delivered cost of feeds if it were transported into the area (P&G, 2.3.3e).
Prices Received	Water Resources Council (WRC) Normal	Bureau of Reclamation Normal	WRC normalized prices are primarily based on the last 5 years of prices. Farm commodities have large price fluctuations over extended time frames. The prices used in the Alternative Evaluation are based on the most recent 20 years of prices. The corresponding Gross National Product (GNP) deflator for each price year is used to compute a 20-year average of constant prices. This price is then reindexed to the current year. This methodology results prices with better stability than the WRC method, especially for basic crops.
Return to farm management	All increased labor at current rate is deducted as return to capital and management. Six percent of variable costs is deducted as a return to management.	Only the opportunity cost of additional operator management is deducted.	According to the basic premise of the P&G, the full "opportunity cost" of all resources should be accounted for. In this area, the farmers management ability is fully utilized without the project since his next best opportunity is that of a full-time laborer. In view of this, any increased managerial skills have zero opportunity cost.

TABLE 9

NED ACCOUNT
COMPARISON BETWEEN P&G AND ALTERNATIVE EVALUATION
(ANNUAL EQUIVALENT VALUES AT 8-3/8%)

	Lake Andes-Wagner Unit	
	P&G Evaluation	Alternative Evaluation
Beneficial Effects - Irrigation		
Direct User Benefits	$ 7,470,000	$13,095,000
Unemployed or Underemployed	404,000	404,000
Fish and Wildlife	41,000	41,000
TOTAL Beneficial Effects	$ 7,915,000	$13,540,000
Adverse Effects - Irrigation		
Project Costs		
Construction	$10,040,000	$10,040,000
Interest During Construction	1,166,000	1,166,000
Opportunity Cost of Energy	501,000	501,000
Operation, Maintenance, and Replacement	1,100,000	1,100,000
TOTAL Adverse Effects	$12,807,000	$12,807,000
Net Beneficial Effects	-4,892,000	733,000
Rate of Return	5.0%	8.9%
Benefit-Cost Ratio	.62	1.06

LAKE ANDES-WAGNER UNIT

Selenium (Se) Evaluation

Most selenium now present on or near the surface of the North American Continent is the result of volcanic eruptions which occurred in the Western United States before the formation of the Rocky Mountains. Geological history indicates much of this area was covered by inland seas. The volcanic material ejected, including selenium, found its way to the sea floor sediment and remained after the seas dried up. Deposits of the element accumulated in the sediments of the disappearing seas and were by varying degrees removed by erosion, reworked by glaciers, covered by low Se deposits, or left exposed as present surface soils.

Selenium occurs principally as a constituent of the sulfide minerals of copper, iron and lead. It is most common in pyrite, bornite, and chalcopyrite. Selenium is found in water, plants, soil and parent material, and as a constituent in ores.

It is an element essential in animal nutrition; however, excessive amounts can result in acute or chronic poisoning.

It has been established that soils of high Selenium are nearly always formed from sedimentary rocks of Permian to Cretaceous Age or from materials (like glacial till) derived from these rocks. In the Lake Andes-Wagner area the Pierre and Niobrara shales are the predominent sources of parent material that may contain high levels of Selenium. However, significant selenium concentractions occur primarily in counties west of the Missouri River where thickness of the Cretaceous formation exceeds 20,000 feet and contains many coarse particles while in eastern South Dakota the formations are significantly thinner (less than 1,000 feet). Due to the upward movement (igneous rock) of the western South Dakota fomations and subsequent erosion, the selenium bearing formations are either relatively close to ground surface or exposed by outcropppings, whereas the Pierre and Niobrara formations in the glaciated

Lake Andes-Wagner area remain deeply buried. The formations are significantly deeper than the relative permeable barrier of glacial till as defined for drainage requirements.

Because of this, sufsurface drainage has been included in this project and water percolating past the crop root zone will be intercepted by these subsurface drains. Therefore, the Pierre and Niobrara formations underlaying the project area will not be in contact with percolation waters.

Selenium concentrations in soils are more serious as a whole in the southern half of the West River country. Other than small outcroppings of Piere and Niobrara formations in various locations along the Missouri River in Charles Mix County, which is in the glaciated area east of the Missouri River, minimal problems with selenium have been indicated from literature reviews and contacts with State agencies, university interests, and landowners in the Lake Andes-Wagner area of Charles Mix County.

Even though no indication of selenium problems were apparent in the project area, it was determined essential to undertake a program to identify high seleniferous geologic materials in order to locate "hot spots" where native levels of available Selenium may be sufficiently high to produce areas of selenium accumulation.

In order to identify locations of seleniferous soil, 12 samples were gathered from randomly selected sites within the Lake Andes-Wagner project area.

Samples were taken to a depth of 120 inches, and laboratory analysis using U.S. Geological Survey Analytical procedures was used.

Realistically 100 percent of the naturally occurring selenium present in soil (< 1.0 - 4.0 ppb) would not be present in return flows in dissolved form. Selenium ions in solution would likely be absorbed by clay surfaces or other mineral compounds in the precolation water at low pH, or have a tendency to form insoluble complexes of ferric iron at high pH. The absorption of selenium ions on precipitated complexes or other active

surfaces such as orgainic particles, would also be an important factor limiting elemental solubility. Therefore, as a result of the selenium analysis, it is anticipated that the low concentrations of selenium in the soil should not cause concentrations in the receiving stream to exceed the U.S. Public Health Service recommended drinking water standard of 10 mg/l of selenium (EPA, 1980).

As a commitment identified in the Planning Report/Final Environmental Statement, if in the event that the water quality monitoring program shows selenium in excess of health or biological standards, remedial measures would be evaluated and implemented. Several measures are available: (1) Lake Andes could be flushed; (2) if the contaminant is of soil leaching origin, those lands would be deleted from the project; or (3) onfarm evaporation ponds could be constructed. The water quality monitoring program would determine any abnormal concentrations before they reach problem levels.

Senator MURKOWSKI. Thank you. Would you care to introduce your colleague?

Mr. MADSEN. This is John Lawson who is the coordinator who is in charge of the technical aspect of this project.

Senator MURKOWSKI. You indicated the environmental impact statement was completed, and it has been reviewed?

Mr. MADSEN. True.

Senator MURKOWSKI. You said you were withholding your evaluation, is that correct?

Mr. MADSEN. We had to wait 30 days from the filing of the final environmental impact statement before we can actively proceed with sending the report forward to the department, and to the Congress. We have to make a record decision and their approval has to be sought through that method.

Senator MURKOWSKI. When are the 30 days up?

Mr. MADSEN. October 28.

Senator MURKOWSKI. So, prior to October 28 you will have your own evaluation then?

Mr. MADSEN. We have that as of October 28 we received the last comments which had to be folded into the record of decision, that is what stopped that decision from going forward on the 28th.

Senator MURKOWSKI. The Governor made some general statements in regard to Corps of Engineers policy of cost structures and 76 percent. Kind of an area of comfort. Would you comment on that as far as how you see the ability of the Bureau to proceed with the project like this, assuming it was authorized and appropriated?

Mr. MADSEN. What the Governor was saying was true, that in the typical Bureau of Reclamation project why we do have 25 percent contingency, 30 percent overhead and 10 percent unlisted items. At this stage of the investigation, which is at coming up with a first stage report, plan report and the EIS, as you proceed

through and come up with final type designs, why those contingency needs are generally reduced. However, in the Lake Andes-Wagner unit, we have anticipated and have folded into the process the use of the Public Law 130 which allows the local district to construct the facilities with the lower overhead. So that has already been built into the project cost here.

Senator MURKOWSKI. You think this estimate, what is it, $150 million or there abouts is realistic?

Mr. MADSEN. I think it is realistic.

Senator MURKOWSKI. That includes the 76 percent that is in there for odds and ends, mistakes?

Mr. MADSEN. Correct.

Senator MURKOWSKI. So, is it safe to assume the project would cost 76 percent less if that wasn't in there?

Mr. MADSEN. No matter who you go to, even private enterprise has got to have overhead and contingencies. They don't have quite the magnitude of those features the Federal Government has, but they do have to have those contingencies.

Senator MURKOWSKI. Is there any precedent set for the situation where the Bureau of Land and Reclamation would basically draw up the specifications of the project and then let a local entity or government, local government entity take over the actual construction and oversight and management, assuming it was built to Federal Government Bureau of Reclamation specifications?

Mr. MADSEN. Yes. The Public Law 130 provision that I mentioned allows the local district to go ahead with the construction and that feature is already built in to this unit.

Senator MURKOWSKI. That is proposed under this unit, or is it optional?

Mr. MADSEN. No, it is proposed. Well, it is described in there, in the overhead feature that we put in there assumes that that is what is going to happen.

Senator MURKOWSKI. So this cost estimate is based on that supposition?

Mr. MADSEN. The Public Law 130 is the concept, it is not a proposal that will be a Public Law 130, that specific program as such. We are saying it is the concept which is identified in the report, and what that predominantly does as identified in the report is allows the irrigation district to not only design in this case the complete distribution system, but also administrate construction of it. As a result of that, contingencies were reduced, there were no unlisted items, our contingencies were reduced to 15 percent and overhead was reduced to 15 percent in an effort to try to recognize some of these.

Senator MURKOWSKI. What is your estimation of the estimated pay back of 34 years? Do you assume that is quite realistic? Do you assume that is realistic or unrealistic, or might it be paid off sooner?

Mr. MADSEN. In the first place we do have a high repayment projected. The report has projections of yield to 1995. It is difficult for the farmer, and quite difficult for even we in the Bureau of Reclamation to forecast prices out that far, and look at today's capability to repay and understand that. However, we have reviewed those projections and we think they are adequate. We do have provisions,

however, to review that in 1987 when we figure the contract will first be signed, and also when the end of the development period of 1995 rolls around, so that those figures can be evaluated and make sure they are proper. If they are proper, we think that $134 payment capacity can be met, and if the Congress and the administration requires the payment of that in the minimum possible time, in other words to take all of the payments capacity from the farmer, then it would take $134 and it would be paid off in 34 years. If we took the more traditional 40 year repayment period, then the repayment cost would be reduced to less than $100.

Senator MURKOWSKI. It will be interesting to hear the testimony from the farmers who would actually benefit from the project as to whether or not the increased productivity of the land is sufficiently warranted by the cost that they would have to assume. I want to thank you very much, gentlemen, for your testimony and we wish you a good day, and we will proceed into what we call panel 1. It will be three individuals. Hon. Leonard Andera, senator from Chamberlain, SD; the Honorable Albert Kocer, the State representative from Wagner, SD; the Honorable Douglas Cole, State representative from Platte, SD. You may proceed, gentlemen. You may proceed under any order that you so desire. If someone has to leave early and go hunting, why that person should be allowed to go first. I might indicate that I am going to start watching the time a little bit now. So, please figure you have got about 10 minutes. Whomever, somebody is not here, so be sure and introduce yourself.

STATEMENT OF HON. LEONARD ANDERA, STATE SENATOR, CHAMBERLAIN, SD

Mr. ANDERA. Thank you, Senator Murkowski and Senator Abdnor. I am State Senator Leonard Andera from Chamberlain. The project does, of course, lie within my legislative district. You are going to hear, I am sure, a tremendous amount of technical information and testimony, and probably some emotional testimony. What I would like to do is quickly sketch some broad experiences that I have had working with irrigation districts and irrigators in the past 14 years. First of all, my grandfather was born and raised in this area, and he used to tell me that he could only get one decent crop out of 7 years any way, so not to get too shook about the hail and the dry years and whatever came along. Obviously, the hybridization of the plants and the improvement of strains, the shortening of the growing season for the seeds has improved that, but the fact remains that the economy in this area is still tied to the roller coaster farming economy. We don't know from one year to the next where it is going to be feast or famine. An irrigation project of whatever size does tend to even out these peaks and valleys, and I assure you that every one here in the area feels that. I practice in a small town, many of my clients are farmers, I have a son and a son-in-law who are in business in the same town, and they see the same thing. When there is a bad year in agriculture, there is a bad year on main street. What this type of project does is to even that out, to stabilize the economy. I think also that you may find that there are benefits to the Federal system that go

above and beyond the pay back or other things. I tend to feel about these types of projects the way I feel about the GI bill. I think the Government got a hell of a bargain when they sent me to law school, because I think I paid them back in increased income taxes many, many fold. I think this is the same type of thing. The second thing that I think these projects would do, and this project in particular, is it would tend to open up new avenues for production. I hear a lot of argument against this type of project because it simply would increase the surpluses we already have. My experience with irrigation districts is that it allows them to expand into other areas. The ones I am working with, and we already expanded into navy beans, in to pinto beans, there are studies going on now on the production of carrots, on the production of potatoes as was mentioned earlier, and we are just starting to do some studies on the commercial production of fish for human consumption as a by-product or a byproduction of this type of a project. Essentially what we are doing here is to open up the entire spectrum of production, not being tied to the feed grains and red meat industry. Now, when those are needed, that brings about our third major benefit, and that is insurance, insurance against the tremendously devastating fact of a period like the 1930's when we simply had no food production capacity in a very, very large area of the country what so ever. This type of thing would help to eliminate that. We would also be able to pick up some of the slack when there are either climate or other types of natural disasters in other parts of the country. If there is a bad frost in Florida, if there is an earthquake in California, this type of project allows us to expand and perhaps pick up the slack in the area of the truck farming of lettuce, carrots, radishes, any number of things. These are all possible. We do have the growing season length, we simply have not had the moisture and this is part of the whole thing. It is an investment in the future, and I think that there are possibilities here that we have not even begun to fathom, but we must start, and I think this is the place to do it. Thank you.

Senator MURKOWSKI. Thank you very much, Senator. We appreciate your testimony and would advise you that the record will be open for approximately 10 days if there is anything further that you wish to submit. Our next witness is the Honorable Albert Kocer, State representative from Wagner. Good morning.

STATEMENT OF HON. ALBERT KOCER, STATE REPRESENTATIVE, WAGNER, SD

Mr. KOCER. Senator Murkowski and Senator Abdnor, I am pleased to be able to testify here at the subcommittee hearing on water and power resources. My name is Albert Kocer and I am a South Dakota State representative, representing my legislative district 20 which includes Buffalo, Brule, Aurora, and Charles Mix Counties in South Dakota. I should note for the record that the Lake Andes-Wagner irrigation project is included within the legislative district that I represent.

I would like to submit this testimony to the subcommittee on behalf of the Lake Andes-Wagner irrigation project. I sincerely hope that as a result of this hearing here today, we will see water

development in the State of South Dakota move forward in a very positive direction. For too long the State of South Dakota and the Federal Government have talked about irrigation projects within this State, using Missouri River water, and as of yet have been unable to develop these projects.

I have lived in Wagner community which is included in the proposed irrigation project all of my 55 years. Born and raised on a farm, I spent 15 years raising my family on a family farm before I established my own farm supply and tractor salvage business in the city of Wagner. My wife and I own and operate this same business yet today. We have three daughters and I am sorry to have to say that two of these have chosen to leave the State of South Dakota because of the State economic and low-income conditions that dominantly prevail in Lake Andes-Wagner area. This is primarily due to our lack of rainfall, an uncontrollable resource which remains unpredictable and causes this area to suffer from drought a majority of the years.

I have been the prime sponsor in changing South Dakota legislation to help form an irrigation project within the district and have also sponsored legislation to enhance the Lake Andes-Wagner irrigation project. Also the South Dakota House and Senate have passed resolutions to urge Congress and the U.S. Senate for funding of the Lake Andes water project. Such legislation has passed both bodies of the South Dakota Legislature with a unanimous vote. I believe this speaks well for South Dakota support for an irrigation project.

Charles Mix County, where the Lake Andes-Wagner irrigation proposal is located, has tried for 40 years to get the Federal Government to fulfill its promises. Over the last 30 years, I have had many occasions to talk to the people in the area about when the Government came in to buy land for the Fort Randall Dam. The people that were acquiring the prime farmland that is now covered by the waters of Lake Francis Case told the people that owned the land that the project would provide flood control, which it does, and provide low cost power, which is not the case. The Lake Andes-Wagner area has one of the highest utility rates in the State. They also said it would provide for large amounts of irrigation. There are a few irrigation projects on the river sides, but very little real irrigation or water development. Large amounts of the property in the area are nontaxable; Federal lands, Indian trust land, and individual Indian land. This causes many hardships in school districts, county government, township government, and the municipalities.

Over half of the 9,600 people in Charles Mix County are classified as poor and low income. There are no job opportunities, so the young people are leaving for the big cities to make a living.

We are in the process of rehabilitation of the Napa to Platte rail line to handle the grain which would enhance the irrigation project. The project would also make the rail line a viable asset to this community.

Economic benefits from the Lake Andes-Wagner irrigation project would not only benefit the immediate area surrounding this project, but could lend economic stability to South Dakota's primary industry—agriculture.

I do not have to tell this committee about the high risk of dryland farming. Simply stated, the ability of farmers and ranchers to consistently produce crops given the whims of mother nature leads to a bust or boom economy that can no longer be tolerated. The debt service required for land, machinery, and livestock does depend on weather conditions and in the future or national crop production should also be insulated as much as possible from the lack of rainfall.

Irrigation could mean the difference between paying the bills or bankruptcy, between having some families living on the verge of poverty or living comfortably, and finally, it could mean the difference between having some healthy small communities or watching smalltown businesses disappear. An irrigation project such as the Lake Andes-Wagner irrigation project would be a great help to the State of South Dakota. For example, we see it to be a viable means for generating extra sales tax dollars for the State. These extra sales tax dollars would come from the extra income realized through irrigation.

Also, I need to note that increased crop production must be tied to programs which provide for a strong market for cash crops. If the costs of production are not covered by the cash crop price received by farmers, the additional income figures I have just presented will not be available.

Again, I would like to stress the importance of this Lake Andes-Wagner irrigation project to the county and State of South Dakota: One, to provide a stable economy for an area that has given much in the name of progress; two, to provide jobs and promote agriculture-related industries, to keep our young people in the community; three, to keep the people off of welfare and to provide farming for the people on the reservation with some opportunity of being able to make a decent living; four, to get the Federal Government out of their lives and establish independent living standards to take pride in themselves.

The people in the area of the proposed Lake Andes-Wagner irrigation project have made a significant contribution to get the project started. They are paying for an $850,000 dollar bond issue on the project for studies and preconstruction costs. They also received a sizable sum through loans from the State of South Dakota for the plans and studies.

Members of the subcommittee, I want to impress on you that as a State representative, who has served in the South Dakota House of Representatives for 9 years, I have been close to the problems in this area and I really believe that the people of this area have waited 40 years for some real water development that was promised to them.

The Lake Andes-Wagner irrigation project has the potential to succeed if we do not overburden the local farmer or rancher with repayment costs that are out of line. In addition, the economic benefits from this project are critical to the future of the legislative district which I serve as well as to the State of South Dakota as a whole. If reasonable cash crop prices are maintained, their investment will return future dividends for all our people.

We, the people in the project, want it. We have worked hard and spent a great deal of money to get it. I would sincerely hope that

this subcommittee would recommend it to the rest of the Congress and the Senate of the United States. Thank you sincerely for your time.

[The prepared statement of Mr. Kocer follows:]

Statement of Hon. Albert Kocer, State Representative, Wagner, SD

Honorable Senator Frank Murkowski and members of the Sub-Committee on Water and Power Resources, my name is Albert Kocer and I am a South Dakota State Representative, representing Legislative District 20 which includes Buffalo, Brule, Aurora, and Charles Mix counties in South Dakota. I should note for the record that the Lake Andes - Wagner Irrigation Project is included within the Legislative District that I represent.

I would like to submit this testimony to the subcommittee on behalf of the lake Andes - Wagner Irrigation Project. I sincerely hope that as a result of this hearing here today, we will see Water Development in the State of South Dakota move forward in a very positive direction. For too long, the State of South Dakota and the Federal Government have talked about Irrigation Projects within this state, using Missouri River Water, and as of yet, have been unable to develop these projects.

I have lived in the Wagner community (which is included in the proposed Irrigation Project) all of my 55 years. Born and raised on a farm, I spent 15 years raising my family on a family farm before I established my own farm supply and tractor salvage business in the city of Wagner. My wife and I own and operate this same business yet today. We have three daughters and I am sorry to have to say that two of these have chosen to leave the State of South Dakota because of the state's economic and low income conditions that dominantly prevail in the Lake Andes, Wagner area. This is primarily due to our lack fo rainfall, an uncontrollable resource which remains unpredictable and causes this area to suffer from drought a majority of the years.

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Again, I would like to stress the importance of this Lake Andes - Wagner Irrigation Project to the County and State of South Dakota:

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3. To keep the people off of welfare and to provide farming for the people on the reservation with some opportunity of being able to make a decent living.
4. To get the Federal Government out of their lives and establish independent living standards to take pride in themselves.

The people in the area of the proposed Lake Andes - Wagner Irrigation Project have made a significant contribution to get the project started. They are paying for an $850,000 bond issue on the project for studies and pre-construction costs. They also received a sizeable sum through loans from the State of South Dakota for the plans and studies.

Members of the subcommittee, I want to impress on you that as a State Representative, who has served in the South Dakota House of Representatives for nine years, I have been

close to the problems in this area and I really believe that the people of this area have waited 40 years for some real water development that was promised to them.

The Lake Andes - Wagner Irrigation Project has the potential to succeed if we do not overburden the local farmer or rancher with repayment costs that are out-of-line. In addition, the economic benefits from this project are critical to the future of the Legislative District which I serve, as well as to the State of South Dakota as a whole. If reasonable cash crop prices are maintained, their investment will return future dividends for all our people.

We, the people in the project area, want it. We have worked hard and spent a great deal of money to get it. I would sincerely hope that this subcommittee would "Recommend It" to the rest of the Congress and the Senate of the United States.

Thank you.

Senator MURKOWSKI. Thank you very much. I appreciate your testimony, Mr. Kocer. I just have one question. Your obvious concern is that we don't overburden the local farmer or rancher with repayment costs that are out of line. I assume we are going to get testimony as to what the parameters might be from the standpoint of what is supportable and what isn't, and of course that depends on a lot of other things that can't necessarily be determined. Obviously, the rise and fall of the price structure for agricultural products. I am wondering, would you care to elaborate just briefly on how the committee would determine what is reasonable repayment? We are estimating a $150 million project with a repayment of 34 years and I suppose if I had all the facts and figures, I would figure out what that would mean to an individual farmer. I would rather hear it from somebody that is anticipating the realities of paying for it.

Mr. KOCER. I am sure you will hear testimony to the fact of how much it is actually going to cost.

Senator MURKOWSKI. Good.

Mr. KOCER. Being a past farmer several years back, and I know prices really went out of line if I was farming today, and I thoroughly believe our farmers have to be able to pay for a project like this here or there is no way that we want to lose our farmers in

this community, we have to have a pay back plan that will work for them.

Senator MURKOWSKI. Mr. George Scully, chairman of the South Dakota Board of Water and Natural Resources Commission from Belle Fourche; Mr. Roland Crisman, chairman of the Lake Andes-Wagner Irrigation District, Wagner; Mr. Leo Holzbauer, chairman, Lake Andes-Wagner Water Systems, Inc. who will be accompanied by Mr. Marc Goldhammer, manager of the Lake Andes-Wagner Irrigation Project. Mr. Robert Slade, chairman, Southern Missouri Water Development District. That takes care of one page. Gentlemen, we welcome you to the committee, we look forward to your testimony and you may proceed in any order you wish.

STATEMENT OF ROLAND CRISMAN, CHAIRMAN, LAKE ANDES-WAGNER IRRIGATION DISTRICT

Mr. CRISMAN. My name is Roland Crisman, of the Lake Andes-Wagner Irrigation District. I was born and raised and have lived on a farm all my life. My son John is presently farming with me now. We operate about 1,400 acres. Most of the land we farm is within the district. I remember the dust forms of the thirties and have worked in the field with horses and mules. I have seen quite a change in farming during my life time. A person wonders what is to happen in the future.

The Bureau of Reclamation studied our area for an irrigation project in the late 1950's. They presented a report in 1964 on 40,000 acres. It failed because of no local support. In 1969, after several dry years, local people and the Bureau started a study and formed an irrigation district and organized a board. I was elected and have served on the board since. Before that study was completed, the Office of Management and Budget cut our funds. We hired a private engineer to study the project. It was too costly, because irrigation had to pay 100 percent of the project.

In 1981 Governor Janklow included our project in his State water plan after the Bureau made an informal study. The Lake Andes-Wagner Water Systems, Inc. was formed to help and with the Bureau of Reclamation and State of South Dakota water resources personnel, we have been on an accelerated study and have cost shared some of the study. We had excellent working relations with the Bureau of Reclamation, the State of South Dakota, the Fort Randall Conservancy Sub-District, and the Southern Missouri Water Development District. They are to be commended and thanked for their fine cooperation. We have received our final planning report. The next step is authorization of the Lake Andes-Wagner irrigation district. This is what we have worked for for many years. The Pick-Sloan plan was a manyfold plan flood control, navigation, power, irrigation, and recreation. The plan developed flood control, navigation, power, and recreation, but where is the irrigation development? We sometimes wonder if the Government is trying to forget their obligation.

We are presently in a very wet cycle at this time of this area, but let us not forget that normal for this area is one fair crop in 3 or 4 years, and prices for crops cannot stay where they presently are or there will not be any farmers to produce them.

We feel that with our final planning report completed and reviewed, we ask that you grant authorization for the Lake Andes-Wagner irrigation district, and our project is built and our dreams of irrigating is a reality as promised by the Pick-Sloan plan. Thank you again.

[The prepared statement of Mr. Crisman follows:]

STATEMENT OF ROLAND CRISMAN, CHAIRMAN, LAKE ANDES-WAGNER IRRIGATION DISTRICT

Lake Andes-Wagner Irrigation District
Testimony prepared for
Sub-Committee on Water & Power Resources for
Authorization of the Lake Andes-Wagner Project
November 2, 1985

We appreciate you taking the time and effort of having this hearing in our area for the Lake Andes-Wagner Irrigation Project. Thank you very much.

I am Roland Crisman, Chairman of the Lake Andes-Wagner Irrigation District. I was born and raised and have lived on a farm all my life (2yrs. in the service). My son John, is presently farming with me now (trying to get a start). We operate about 1400 acres. Most of the land we farm is within the District. I remember the dust storms of the 30's and have worked in the field with horses and mules. I have seen quite a change in farming during my life time. A person wonders what is to happen in the future.

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The Pick-Sloan Plan was a several fold plan - Flood control, Navigation, Power, Irrigation, and Recreation. The Plan developed flood control, navigation, power, and recreation, but where is the irrigation development? We sometimes wonder if the government is trying to forget their obligation.

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We feel that with our final planning report completed and reviewed, we ask that you grant authorization for the Lake Andes-Wagner Irrigation District, and our project is built and our dreams of irrigating is a reality, as promised by the Pick-Sloan Plan.

Thank you again.

Senator MURKOWSKI. Thank you very much, Mr. Crisman. I assume then based on your experience as a farmer in the area that you totally support the project?

Mr. CRISMAN. Yes.

Senator MURKOWSKI. You don't elaborate a great deal on the cost. I assume it is conditioned on the cost and you feel the cost which is estimated to be $134 per acre is reasonable in the sense that the offsetting productivity of the land will be there?

Mr. CRISMAN. The price for the product were there; yes.

Senator MURKOWSKI. Well, that is an if that I don't know. I know you don't know.

Mr. CRISMAN. There is a lot of if's.

Senator MURKOWSKI. I guess my question is do you feel you are really willing as a farmer to accept that risk?

Mr. CRISMAN. Yes.

Senator MURKOWSKI. OK, thank you. The next witness?

Mr. HOLZBAUER. I am Leo Holzbauer.

Senator MURKOWSKI. Welcome to the committee, Leo.

STATEMENT OF LEO HOLZBAUER, CHAIRMAN, LAKE ANDES-WAGNER WATER SYSTEMS, INC., WAGNER, SD

Mr. HOLZBAUER. Welcome to Wagner and Lake Andes. My name is Leo Holzbauer. I am a family farmer and irrigator. My father and family have pumped from wells since 1957. As a present irrigator, I have been intrigued by the quantity and quality of the stored river water in our backyard. The quality of the stored river water has been verified by the Bureau of Reclamation to be the very best available for irrigation. I became interested in the 45,000-acre Lake Andes-Wagner proposal in 1982 when local interests discussed sponsoring a new Bureau of Reclamation study.

Because of the need for quality water delivered to my land, I support this project proposal. The printed study provides adequate documentation that this is a feasible proposal.

Although the farm economy is going through the toughest of times, I believe we must do something to help ourselves. The project proposal offers numerous opportunities to the local farmers. With irrigation, traditional and special crops could be grown in volume so local processing would be a feasible alternative for the future.

The farmer's future must have a stabilized production year in and year out to meet present farm expenses. Under the present farming conditions, it is very difficult to survive the economic stress of a drought as we have known many times in the past. The project features a complete water delivery system and complete surface and subsurface drainage system. The past several years we have had a combination of losses from drought and flooding. Both drought and flood losses can be minimized in the project area if the project is built. Therefore, it is necessary that we receive authorization soon so we can proceed with the preconstruction phase.

I visualize the preconstruction phase as follows: One, the irrigation district board of directors will negotiate a contract with the Bureau of Reclamation; two, the Bureau of Reclamation will certify the individual acres to be irrigated and complete the required de-

signs; three, when the contract is completed, the local people will then decide whether or not to build the project; and four, if local decision is positive, the irrigation district would seek appropriations to build the project.

This project proposal supports a favorable benefit-cost ratio of 1.06 and a rate of return of 8.9 percent. These ratios are important in determining a feasible project, but the real benefits are those that help sustain the family farm.

I would like to review just a few of these extra benefits. One, irrigation would offer more cropping options. Two, irrigation would give an opportunity to increase average yields. Three, those yields would help to establish local markets with the more dependable production. Four, we could then have more strength in a profit potential. Five, irrigation can be an extra benefit to a farming community by providing more off farm jobs for our local people. Six, hopefully it will slow down the out migration of our young people and family farmers.

It is one thing that I have to really stress that when this project, if we do get authorization, that is what we are asking for now, is the authorization of this project, so that we can negotiate with the Bureau of Reclamation this repayment contract, and that is the repayment contract that is a concern to the local people so they know where they are sitting on the bottom line. That is what we have got to have. There is pros and cons to our project, and there is a lot of interest in the area in that they want to know what this project is going to cost them, but in order for us to negotiate that contract with the Bureau of Reclamation, we have got to have an authorized project, and that is why we are here today for this authorization, so we can go ahead and negotiate that contract with the Bureau.

In closing, I hope you can see the importance of this project to our area and give the needed support it needs to Congress so we may receive authorization as soon as possible.

I wish to thank you for your time and concern in coming out here to hold this field hearing and hope that everyone's time has not been spent in vain.

[The prepared statement of Mr. Holzbauer follows:]

STATEMENT OF LEO HOLZBAUER, CHAIRMAN, LAKE ANDES-WAGNER WATER SYSTEMS, INC., WAGNER, SD

Testimony prepared for the

Subcommittee on Water and Power

Honorable Frank Murkowski - Chairman for

Authorization of the Lake Andes-Wagner Irrigation Project

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The project proposal offer's numerous opportunities to the local farmer's. With irrigation, traditional and special crops, could be grown in volume so local processing would be a feasible alternative for the future.

Farmer's future must have a stabilized production year in and year out, to meet present farm expenses.
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Both drought and flood losses can be minimized in the project area if the project was built.

Therefore, it is necessary that we receive authorization soon, so we can proceed with the pre-construction phase.

I visualize the pre-construction phase as follows:

1. The Irrigation District Board of Directors, will negotiate a contract with the Bureau of Reclamation.
2. The Bureau of Reclamation will certify the individual acres to be irrigated and complete the required designs.
3. When the contract is completed, the local people will then decide whether or not to build the project.
4. If local decision is positive, the Irrigation District would seek appropriations to build the project.

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Senator MURKOWSKI. Thank you very much. Senator Abdnor, feel free to ask questions at any time if you wish. Do it now or at the end of the panel, whatever is your pleasure.

Senator ABDNOR. Maybe at the end of the panel.

Senator MURKOWSKI. Our next witness is Mr. Slade. Mr. Slade is chairman of the Southern Missouri Water Development District. Good morning.

STATEMENT OF ROBERT SLADE, CHAIRMAN, SOUTHERN MISSOURI WATER DEVELOPMENT DISTRICT, TYNDALL, SD

Mr. SLADE. My name is Robert Slade, and I am chairman of the Southern Missouri Water Development District. The Southern Missouri Water Development District consists of Bon Homme, Brule, Buffalo, Charles Mix, Douglas, and Gregory Counties, and a small portion of Lyman County. The Southern Missouri Water Development District strongly supports the planning report and feels that it is imperative that Congress authorize the Lake Andes-Wagner irrigation project. We in South Dakota have waited 35 years for an irrigation project that was promised to us as part of the Pick-Sloan Missouri Basin Program.

The State of South Dakota gave up 500,000 acres of land back in 1944 to protect our down stream neighbors from flooding. The Federal Government promised us nearly 1 million acres of irrigation.

To date we have not seen this promise fulfilled. The funding for preconstruction and authorization of the 45,000 acre Lake Andes-Wagner unit as part of the Pick-Sloan Program would be a start.

Land owners in the project area and the State of South Dakota have invested over $1 and $1½ million to get the project where it is today. We have strong local support, and a very active local leadership in trying to get this project started.

The Southern Missouri Water Development District that I represent was formed by an act of the South Dakota Legislature, and we came into existence in January 1985. Prior to that, the Lake Andes-Wagner project was in the Fort Randall Conservancy Sub-District. Four of the present board members were also board members of the Fort Randall Conservancy Sub-District. Over the years, the Fort Randall Conservancy Sub-District has contributed over $80,000 to the Lake Andes-Wagner irrigation project for engineer studies, director expenses, and planning efforts. The Southern Missouri Water Development District continues to support the Lake Andes-Wagner project. We have provided $15,000 dollars in our 1986 budget to support the project. This represents over 30 percent of our financial assistance to projects in our 7 county area.

I think it is important that the committee members have some background on the Lake Andes-Wagner irrigation district. In 1969 after several dry years, the local people formed the Lake Andes-Wagner irrigation district which covered nearly 100,000 acres. The Bureau of Reclamation started studies, but before they were completed the Office of Management and Budget cut off funds. When Federal funds were cut off, the district decided to investigate the possibility of developing a project using private consulting engineers. The issue was put up for a vote to the land owners within the irrigation district. The people voted for a $900,000 bond issue to pay for the engineering study.

The concept was that if the project was feasible, the costs for the engineer's study would be paid back by the people receiving water to irrigate; however, after studies were completed in 1978, the people voted not to construct the project without any Federal assistance. As a result of the people saying "no" to constructing with private financing, the land owners in the original district have to pay off the $900,000 bond issue. The bonds will not be paid off until the year 1989. There is considerable confusion with the land owners. They seem to think if they voted "no," they should not have to be paying anything to pay off the bonds. But they forget, or do not understand, that they voted in favor of the bond issue to conduct the engineering studies.

Authorization will give the Federal Government an opportunity to keep part of earlier promises and restore the faith of the local people and the State of South Dakota, since we are entitled to irrigation as part of the Pick-Sloan plan.

We feel that planners with the Bureau of Reclamation had some restraints in their planning process, the plan is rather conservative in showing benefits. My directors, the directors of the Lake Andes-Wagner project, and I, all feel that if crop production through irrigation were stabilized, we would see increased livestock numbers. With an adequate feed base, we would see additional feeders coming into the area. Also, we feel that wildlife will be enhanced

more than is reflected in the planning report. For example, last year was the first time in nearly 20 years that Red Lake had water in it. Completion of the project would provide water every year. Also, the lake of Lake Andes would have an opportunity for receiving water that it has never had before. In addition, the wet land area to be acquired would have water. Without the project, there are many years when Lake Andes is dry, along with the wet lands. Waterfowl do not do well without water.

The directors of the irrigation district and Lake Andes-Wagner water systems are very pleased with the cooperation they have received from the Bureau of Reclamation and the State of South Dakota. By working together, they have been able to make a number of changes to make a better project and more acceptable to the local citizens and environmental concerns. To name a few of these important changes, they have relocated the main pump site, changed canal routes, and changed relift pump sites.

My directors and I have come through the dirty thirties, and have seen the heartbreak of farmers and businessmen many times during drought cycles. In South Dakota we have excellent soil for irrigation, but far too often mother nature does not provide enough moisture. A large part of our economy depends on a cash crop, and with no crops due to lack of moisture, farms are in a real disaster. A greater disaster results when the farm enterprise has a combination of crop and livestock income and during dry cycles livestock herds have to be sold due to lack of feed. The last few years rainfall has been above normal, thank God; for with the high operating costs farmers have today, they can not stand a drought. A lot of farms are going under without a drought.

When these dry cycles hit, the whole economy suffers. In addition to the economy of the State suffering, the application of soil conservation practices also comes to a halt. During dry years, the farmers have all they can do to come up with financial resources to feed their families and frequently have to sell some of their assets to meet their financial obligations.

In 1976 during a dry cycle, 12 groups were organized in the area to develop irrigation. The problem farmers seem to have is that they wait until they have a crop failure before they try to start irrigating. This is why the Lake Andes-Wagner irrigation project has to be developed now. We do not know when the dry cycle will come again, but we have to be ready. The sooner the project can be constructed, the sooner the area, the State of South Dakota, and the nation will have insurance that we have adequate feed to maintain the livestock herds.

Nearly every summer crop yields suffer due to lack of moisture. During the latter part of July and early August, we have hot southerly winds that make crops wilt and yields go down. Not every year is a crop failure, but nearly every year yields are reduced.

This project has been in various stages of planning for over 30 years. The local people are ready. It is high time Congress authorizes this project. Thank you very much.

[The prepared statement of Mr. Slade follows:]

Prepared Statement of Robert Slade

SOUTHERN MISSOURI WATER DEVELOPMENT DISTRICT
TESTIMONY FOR PUBLIC HEARING
REGARDING AUTHORIZATION OF
LAKE ANDES-WAGNER IRRIGATION UNIT
U.S. SENATE WATER AND POWER SUBCOMMITTEE
WAGNER, SOUTH DAKOTA
NOVEMBER 2, 1985

HONORABLE FRANK MURKOWSKI, CHAIRMAN, AND MEMBERS OF THE SUBCOMMITTEE:

Thank You for the opportunity to testify today. My name is Robert Slade, and I am Chairman of the Southern Missouri Water Development District.

The Southern Missouri Water Development District consists of Bon Homme, Brule, Buffalo, Charles Mix, Douglas, and Gregory Counties, and a small portion of Lyman County. The Southern Missouri Water Development District strongly supports the Planning Report and feels that it is imperative that Congress authorize the Lake Andes-Wagner Irrigation project. We in South Dakota have waited 35 years for an irrigation project that was promised to us as part of the Pick-Sloan Missouri Basin Program.

The State of South Dakota gave up 500,000 acres of land back in 1944 to protect our downstream neighbors from flooding. The federal government promised us nearly a million acres of irrigation. To date, we have not seen this promise fulfilled. The funding for preconstruction and authorization of the 45,000 acre Lake Andes-Wagner Unit as part of the Pick-Sloan Plan would be a start.

The landowners in the project area and the State of South Dakota have invested over one and one-half million dollars to get the project where it is today. We have strong local support and a very active local leadership in trying to get this project started.

The Southern Missouri Water Development District that I represent was formed by an act of the South Dakota Legislature and we came into existence in January of 1985. Prior to that, the Lake Andes-Wagner project was in the Fort Randall Conservancy Sub-District. Four of the present Board members were also Board members of the Fort Randall Conservancy Sub-District. Over the years the Fort Randall Conservancy Sub-District has contributed over eighty thousand dollars to the Lake Andes-Wagner

Irrigation project for engineer studies, director expenses, and planning efforts. The Southern Missouri Water Development District continues to support the Lake Andes-Wagner project. We have provided fifteen thousand dollars in our 1986 budget to support the project. This represents over thirty percent of our financial assistance to projects in our seven-county area.

I think it is important that the Subcommittee members have some background on the Lake Andes-Wagner Irrigation District. In 1969 after several dry years, the local people formed the Lake Andes-Wagner Irrigation District, which covered nearly 100,000 acres. The Bureau of Reclamation started studies, but before they were completed the Office of Management and Budget cut off funds. When federal funds were cut off the District decided to investigate the possibility of developing a project using private consulting engineers. The issue was put up for a vote to the landowners within the irrigation district. The people voted for a $900,000 bond issue to pay for the engineering study.

The concept was that if the project was feasible, the costs for the engineer's study would be paid back by the people receiving water to irrigate; however, after studies were completed in 1978, the people voted not to construct the project without any federal assistance. As a result of the people saying no to constructing with private financing, the landowners in the original district have to pay off the $900,000 bond issue. The bonds will not be paid off until the year 1989. There is considerable confusion with the landowners. They seem to think if they voted no, they should not have to be paying anything to pay off the bond. But they forget, or do not understand, that they voted in favor of the bond issue to conduct the engineering studies.

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We feel that planners with the Bureau of Reclamation had some restraints in their planning process, so the plan is rather conservative in showing benefits. My Directors, the Directors of the Lake Andes-Wagner project, and I, all feel that if crop production through irrigation were stabilized, we would see increased livestock numbers. With an adequate feed base, we would see additional feeders coming into the area. Also, we feel that wildlife will be enhanced more than is reflected in the Planning Report. For example, last year was the first time in nearly twenty years that Red Lake had water in it. Completion of the project would provide water every year. Also, the lake of Lake Andes would have an opportunity for receiving water that it has never had before. In addition, the wetland areas to be acquired would have water. Without the project there are many years when Lake Andes is dry, along with the wetlands. Waterfowl do not do well without water.

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Nearly every summer crop yields suffer due to lack of moisture. During the latter part of July and early August, we have hot southerly winds that make crops wilt and yields go down. Not every year is a crop failure, but nearly every year yields are reduced.

This project has been in various stages of planning for over 30 years. The local people are ready. It is high time Congress authorizes this project.

Robert W Slade

Senator MURKOWSKI. Mr. Slade, thank you. Our next witness is Mr. Marc Goldhammer. Mr. Goldhammer.

STATEMENT OF MARC GOLDHAMMER, MANAGER, LAKE ANDES-WAGNER IRRIGATION PROJECT, WAGNER, SD

Mr. GOLDHAMMER. Good morning, Senator Murkowski, welcome to South Dakota.

Senator MURKOWSKI. Thank you. I look forward to coming here too.

Mr. GOLDHAMMER. My name is Marc Goldhammer, I serve as manager of the Lake Andes-Wagner irrigation project. I do work for the local people, and it is my job that I would offer to answer any questions. My statement will be abbreviated, so I would ask if you do have any questions that we can clarify some things, I would be more than happy to do it.

Senator MURKOWSKI. Your entire statement will be entered into the record, Mr. Goldhammer.

Mr. GOLDHAMMER. Thank you. We appreciate very much the opportunity to familiarize you with the No. 1 irrigation proposal in the Upper Missouri region, namely the Lake Andes-Wagner irrigation project. Over 30 years of planning and studying has culminated into one small 45,000-acre project. The local sponsors, since 1982, have coordinated with the local landowners as to which lands were to be studied and how we might best serve the total project area.

The main goal of the project sponsors is to provide an affordable and profitable project for the family farm. It is the project sponsor's sincere belief that this irrigation project will contribute to the stability of the farm unit year in and year out by profitable yields and increased livestock benefits. Further, we see the opportunity for various special crops with irrigation that we do not have as an option under dry land conditions.

The State of South Dakota and the local people have invested over $1½ million trying to get a project we can approve and afford. The tools are available through the Pick-Sloan Missouri Basin Program and the Bureau of Reclamation. Therefore, we respectfully ask the Subcommittee on Water and Power to support the authorization of the Lake Andes-Wagner unit.

The recently filed September 17, 1985 final planning report and environmental statement is available for your use and appraisal of the project proposal.

The following are some of the main points of the project: One, the 45,000-acre preferred plan is simple and uses the most cost-effective construction features. Two, the plan includes a complete surface and subsurface drainage system. Three, wildlife needs have been planned and accommodated by specific proposals. Four, water quality is assured in the plan by specific proposals. Five, extensive soils testing confirms we have very good land for irrigation. Six, long-term water quality tests confirm that Missouri River water is the very best available for irrigation. Seven, the project distribution system will deliver water to the edge of each tract of land to be irrigated. Eight, landowners and operators need to know exactly what the replacement costs will be. The local sponsors cannot supply that figure until a contract is signed with the Bureau of

Reclamation. This cannot be done until the project is authorized. Nine, only those benefited acres of land receiving project water will be responsible for repayment of the project. I think this is a contentious item locally because we have a 90,000-acre irrigation district, but the bonded indebtedness that each and every landowner is paying off until 1989. Under this proposal, only those acres receiving benefit are responsible for the repayment, and there is still some confusion and consternation from local people if they belong to the total district why they may have to help pay for a developed district of 45,000 acres, and I hope you can understand the dilemma we are in trying to keep that sorted out to the local people. Ten, in the event of depressed prices, the local sponsors are looking to the Pick-Sloan Missouri Basin power revenues to pay for part of the project.

In closing I want to thank you for hearing the Lake Andes-Wagner project proposal, and we ask for full support of the authorization of the project.

We would be pleased to answer any questions you may have today or in the future.

[The prepared statement of Mr. Goldhammer follows:]

Statement of Marc Goldhammer, Manager, Lake Andes-Wagner Irrigation Project, Wagner, SD

Honorable Frank Murkowski
Chairman of the Sub-Committee on Water and Power
United States Senate

I wish to welcome the Honorable Frank Murkowski, and the Honorable James Abdnor to this Hearing, and to Wagner, So. Dak.

We appreciate very much the opportunity to familiarize you with the No. 1 Irrigation Proposal in the Upper Missouri Region, namely the Lake Andes-Wagner Irrigation Project.
Over 30 years of planning and studying has culminated into one small 45,000 acre project.
The local sponsors, since 1982, have co-ordinated with the local landowners as to which lands were to be studied and how we might best serve the total project area.

The main goal of the project sponsors, is to provide an affordable and profitable project for the family farm.
It is the project sponsors sincere belief that this irrigation project will contribute to the stability of the farm unit, year in and year out, by profitable yields and increased livestock benefits. Further, we see the opportunity for various special crops with irrigation, that we do not have as an option under dry land conditions.

The State of South Dakota and the local people have invested over 1½ million dollars trying to get a project we can approve and afford. The tools are available through the Pick-Sloan Missouri Basin Program and the Bureau of Reclamation.
Therefore, we respectfully ask the Sub-Committee on Water and Power to support the Authorization of the Lake Andes-Wagner Unit.

The recently filed (September 17, 1985) Final Planning Report and Environmental Statement, is available for your use and appraisal, of the project proposal.

The following are some of the main points of the project:

(1) the 45,000 acre preferred plan is simple and uses the most cost effective construction features.

(2) The plan includes a complete surface and sub-surface drainage system.

(3) Wildlife needs have been planned and accomodated by specific proposals.

(4) Water quality is assured in the plan by specific proposals.

(5) Extensive soils testing confirms we have very good land for irrigation.

(6) Long term water quality tests confirm that Missouri River water is the very best available for irrigation.

(7) The project distribution system will deliver water to the edge of each tract of land to be irrigated.

(8) Landowners and operators need to know exactly what the repayment costs will be. The local sponsors cannot supply that figure until a contract is signed with the Bureau of Reclamation. This cannot be done until the project is authorized.

(9) Only those benefited acres of land receiving project water will be responsible for repayment of the project.

(10) In the event of depressed prices the local sponsors are looking to the Pick Sloan Missouri Basin Power Revenues to pay for part of the Project.

In closing, I want to thank you for hearing the Lake Andes-Wagner Project Proposal, and we ask for full support of the Authorization of the Project.

We would be pleased to answer any questions you may have today or in the future.

Senator MURKOWSKI. Thank you, Mr. Goldhammer, I am glad you addressed in your closing remarks the question of where additional revenue would come if there were a depression or continued depression in the price. I assume you have to establish some norm on agriculture indexing of some kind?

Mr. GOLDHAMMER. Right.

Senator MURKOWSKI. You indicate you would pay up to a level and other than that you would pick it up from the power revenue?

Mr. GOLDHAMMER. Just to bring things into a little better context. In our planning report it states in there that we have the ability to repay $133 and some cents. Based on the 1995 prices, and based on the 1995 yields. If we relate that back to today, we are probably with today's prices, give or take a little bit one way or another, because prices do fluctuate, but we are looking at probably $33 or $34 ability to repay compared to if our prices and yields to develop——

Senator MURKOWSKI. $33 today?

Mr. GOLDHAMMER. Yes. I think that is pretty realistic. If you brought it back down to today's prices, why that is what would be available. We realize that is a very small margin, but I am sure it is no news to you even though you come from Alaska that margins are very, very slim no matter what kind of farming enterprise you are in right now. So, trying to be realistic, we are looking at those kind of figures for today.

Senator MURKOWSKI. I have another question that anyone can answer. What, roughly, is the value of the agricultural land in the area that would be affected currently? What is the value per acre roughly of the land that would be affected?

Mr. GOLDHAMMER. If I could answer that to the best of my ability. A few years ago, why land in this area sold from $450 to $800 bracket depending on the kind of land it is. I spoke with the Farm Home local manager here the other day, and it appears that land values now have gone down to approximately the $400 level for the top side, and from $150 to $400 I guess would probably be what we are looking at for land values as of today. Of course, they get their figure on recent sales and so forth.

Senator MURKOWSKI. If the project were funded and built, I didn't know what the mechanical structure is, but the value would still be based upon a dryland value?

Mr. GOLDHAMMER. That is right.

Senator MURKOWSKI. Isn't that kind of hard to do effectively, because what you compare it with, for example, do you compare it with $450 to $800, or do you compare it with a value currently of $400? It would seem to me——

Mr. GOLDHAMMER. When we started, land values were holding pretty steady, and I will say they were going up, but they were holding steady at that point. In 3 years time, why we have seen the values more or less drop.

Senator MURKOWSKI. Let's assume the project were authorized and funded, what would the base value be if let's say it were done in 1986 and funded, would it be based on the $450 to $800 range, or $400 and lower?

Mr. GOLDHAMMER. It is tough for me to answer that question, tougher than nails. To me, why the land is worth less and it would

be based on present values. I don't see it could be anything different than that. If you put water or do not put water on, it is probably not going to change the value of the land in this area very quickly. I guess over a long period of time you would recognize that land would, water rights on it and available water should be more valuable than land that does not have water. For purposes of establishing value, I think we are going to be looking at current values, whatever they are on that particular day.

Senator MURKOWSKI. My point is the fact that land is going to be so much more productive, you are not going to have a failure in 2 out of every 10 years because of drought. As a consequence, how much do you pick up in additional revenues as a consequence of that offset by the cost of paying for the proportionate share of the $134 per acre, or whatever? It would seem that if your land value did not appreciate, which that is the intent to make sure there is no speculation, you would be far ahead because of your increased productivity.

Mr. GOLDHAMMER. Right, there is no doubt about that. The production increases are what we are after without a doubt.

Senator MURKOWSKI. You could theoretically, if you wanted to, put your land up for sale at some point in time, have an awful lot of people wanting to buy it at whatever the market price is based on the realization that it had the high productivity capability because of the water. I guess I would just ask, as a matter of curiosity, then what are you supposed to do, flip a coin to see which one of several farms gets it or is there a provision in the equation to address that? There isn't, any of my expert staff know how the powers that be figured out what you do if that happened? I suppose it is something you don't worry about much in this climate today.

Mr. BROWN. Under the Reclamation Reform Act and reclamation law, until a project is paid out under the law, the excess land can only be sold at a price approved by the Secretary of the Interior, and that price is determined based upon comparison with dry land price sales of comparable sales in a comparable area. As far as the selection process of who actually purchases the property, I believe that is a willing seller, willing buyer basis subject, however, to approval of the price by the Secretary, and to ensure that such sales are in conformance with reclamation law. So that none of the requirements under reclamation law are violated.

Senator MURKOWSKI. Mr. Conway, do you agree with that?

Mr. CONWAY. Sounds good to me.

Senator MURKOWSKI. We have our answer. I have no further questions, gentlemen, thank you for your testimony.

[Subsequent to the hearing Mr. Goldhammer submitted the following:]

South Dakota
Department of
Game, Fish and Parks

Office of the Secretary
Sigurd Anderson Building
445 East Capitol
Pierre, South Dakota 57501
(605) 773-3387

Be it resolved that the South Dakota Department of Game, Fish and Parks Commission lends it's support to the Lake Andes Wagner Irrigation Project in Charles Mix County. This project will have positive impacts for, among others, the production of fish, ducks, geese, upland game and big game. Hunting, fishing and general recreational opportunities will be enhanced by completion of this project.

I hereby certify that this is a true extract of the minutes of the November 4, 1985 Game, Fish and Parks Commission meeting as it pertains to the above and foregoing resolution.

Jeff Stingley, Secretary

Senator MURKOWSKI. Our next panel is Mr. Warren Chappelle, president, Missouri Breaks Audubon Society, Pierre, SD; Mr. Kirk Koepsel, conservation chairman, South Dakota Chapter of the Sierra Club, Pierre, SD; Mr. Owen Wipf, chairman of the South Dakota State Game, Fish and Parks Commission, Wagner, SD. We would ask that you proceed in any order that you so desire. Please introduce yourself for the court reporter.

STATEMENT OF WARREN CHAPPELLE, ACTING PRESERVATION CHAIRMAN, MISSOURI BREAKS AUDUBON SOCIETY, PIERRE, SD

Mr. CHAPPELLE. My name is Warren Chappelle, I am the acting preservation chairman for the Missouri Breaks Audubon Society. I want to thank Senators Murkowski and Abdnor. We appreciate the opportunity to present our views before this committee and the fact that this hearing has been scheduled so that South Dakotans have the opportunity to present their views.

The Missouri Breaks Audubon Society opposes authorization of the Lake Andes-Wagner unit at this time for two major reasons, the water quality issue has not been thoroughly studied and the economic evaluation of the project does not reflect real world costs and benefits of the project.

The Bureau of Reclamation's economic analysis for this project is not based on approved procedures. Using standard principles and guidelines procedures that grossly overstate benefits and understate costs, the Bureau discovered that the project would return only 59 cents for every $1 invested.

Wildlife mitigation for the project includes replacing lost wetlands, not on an acre-for-acre basis with like-value habitat, but by extensively managing half as many acres as are destroyed. Even though it is required by law, 20 years after we lost hundreds of thousands of acres of habitat to Lake Oahe and Lake Sharpe, we have yet to see a serious attempt to mitigate those losses. When it starts to get economically tight for those who irrigate under this project, the first thing to be cut will be the intensive wildlife management mitigation programs.

The Bureau of Reclamation's record on irrigation projects is not admirable. Aside from economic evaluations that have resulted in projects that can never repay their debts, the long-term legacy of Bureau of Reclamation projects in the West will be one of poisoning the land and water.

The Lake Andes area is a known source of selenium. It is one of the first places where the effects of selenium poisoning was reported. The grotesquely deformed offspring of waterfowl in Kesterson National Wildlife Refuge has been directly attributed to the selenium leeched out of a Bureau project in California. That has resulted in the decision to shut down a half-million-acre project with many farmers facing economic ruin.

Higher levels of selenium have been detected in waters of the Belle Fourche River below the Belle Fourche project than in waters upstream.

Even the sacred cow of the Pick-Sloan project, the Garrison diversion unit has problems with selenium. In a May 1985 letter from the Bureau obtained through a Freedom of Information Act

request, the Bureau states that high levels of selenium in birds in the northern James River Valley in South Dakota could have been derived from selenium-rich areas to the north. The area to the north is where lands are slated for irrigation under Garrison.

Despite this and evidence that high levels of selenium are being drained from irrigation projects in California, Idaho, Montana, Utah, New Mexico, and Arizona, as well as South Dakota, all we hear from the Bureau is that they are studying the problem.

Is the problem being studied? The Assistant Interior Secretary and former Bureau Chief of the Bureau of Reclamation was placed in charge. How can anyone have confidence in a study where the one person who may have the most to gain from whitewashing a problem is in charge of investigating it? We feel that any authorization for projects should be held up until environmental impacts are reviewed thoroughly by an independent agency and adequate remedies are developed. This is especially true where, as here, there is evidence that suggests that a serious water quality problem exists. We have yet to see a comprehensive water quality report for the Lake Andes-Wagner unit.

I will be introducing into the record two series of in-depth articles on selenium and its impacts. One is from the Rocky Mountain News, and the other is from the Sacramento Bee.

We would like to see every potential irrigator review these documents before asking that his friends and neighbors be exposed to these risks for a project where these impacts have not been addressed.

The contaminated drain waters from this project will go into Choteau Creek and Lake Andes. We are concerned about the impact this will have on people living near by and on the wildlife populations in the Lake Andes National Wildlife Refuge.

Prior to authorization of this project, we feel that the rights of the Yankton Sioux Tribe to Lake Andes need to be finally resolved and all necessary permission be obtained from the tribe. Will the Yankton Sioux Tribe allow Lake Andes to be used as a toxic cesspool for agricultural wastes?

In dealing with wetlands, the Bureau of Reclamation failed to address the flood control, ground water recharge, pollutant control, and esthetic values of wetlands that are lost by this project. They have not allowed for mitigation of these lost values, nor have they included the costs associated with this. We feel these costs must be included in the Bureau's economic analysis.

Our most pressing water development need in South Dakota is for adequate supplies of good quality drinking water on our farms, in our towns, and in our cities. This is a critical public health need. For the same amount of money that this project costs, there could be a water supply system constructed to provide needed quality drinking water to over 1,000 square mile area and directly benefit upward of 100,000 people. Thank you for coming here today and holding this hearing.

Senator MURKOWSKI. Thank you very much. I might add, it would be helpful if the committee had copies of your testimony.

Mr. CHAPPELLE. I will be presenting them.

Senator ABDNOR. Do any of you have copies of your testimony?

Senator MURKOWSKI. I don't know why, I assume that we had advised the witnesses, because it is very helpful.

Mr. CHAPPELLE. Quite frankly, we have been trying to do that, unfortunately I have just recovered from the flu and was up until 2 o'clock finishing copying or typing this one copy and did not have access to a copy machine.

[The prepared statement of Mr. Chappelle follows:]

PREPARED STATEMENT OF WARREN CHAPPELLE

THE Missouri Breaks Chapter
NATIONAL AUDUBON SOCIETY
P.O. Box 832
PIERRE, SOUTH DAKOTA 57501

Testimony before the United States
Senate Energy Committee on the
Lake Andes/Wagner Irrigation Project
Wagner, South Dakota- November2, 1985

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The Bureau of Reclamation's economic analysis for this project is not based on approved procedures. Using standard Principles and Guidelines procedures that grossly overstate benefits and understate costs, the Bureau discovered that the project would return only 59¢ for every dollar invested.

Wildlife mitigation for the project includes replacing lost wetlands, not on an acre-for-acre basis with like value habitat, but by intensively managing half as many acres as are destroyed. Even though it is required by law, twenty years after we lost hundreds of thousands of acres of habitat to Lake Oahe and Lake Sharpe, we have yet to see a serious attempt to mitigate those losses. When it starts to get economically tight for those who irrigate under this project the first thing to be cut will be the intensive wildlife management mitigation programs.

The Bureau of Reclamation's record on irrigation projects is not admirable. Asside from economic evaluations that have resulted in projects that can never repay their debts, the longterm legacy of Bureau of Reclamation projects in the West will be one of poisoning the land and water.

The Lake Andes area is a known source of selenium. It was one of the first places where the effects of selenium poisoning was reported. The grotesquely deformed offspring of waterfowl in Kesterson National Wildlife Refuge has been directly attributed to the selenium leached out of a Bureau project in California. That has resulted in the decision to shut down a half million acre project with many farmers facing economic ruin.

Higher levels of selenium have been detected in waters of the Belle Fourche River below the Belle Fourche Project than in waters upstream.

Even the sacred cow of the Pick Sloan Project, The Garrison Diversion Unit has problems with selenium. In a May 1985 letter from the Bureau obtained through a Freedom of Information Act request, the Bureau states that high levels of selenium in birds in the northern James River Valley in South Dakota could have been derived from "selenium rich areas to the north." The area to the north is where lands are slated for irrigation under Garrison.

Despite this and evidence that high levels of selenium are being drained from irrigation projects in California, Idaho, Montana, Utah, New Mexico and Arizona, as well as South Dakota, all we hear from the Bureau is that they are "studying the problem."

How is the problem being studied? The Assistant Interior Secretary and former Bureau Chief of the Bureau of Reclamation was placed in charge. How can anyone have confidence in a study where the one person who may have the most to gain by white-washing a problem is in charge of investigating it.

We feel that any authorization for projects should be held up until environmental impacts are reviewed thoroughly by an independant agency and adequate remedies are developed. This is especially true where, as here, there is evidence that suggests that a serious water quality problem exists. We have yet to see a comprehensive water quality report for the Lake Andes-Wagner Unit.

I will be introducing into the record two series of indepth articles on selenium and its impacts. One is from the Rocky Mountain News and the other is from the Sacramento Bee.

We would like to see every potential irrigator review these documents before asking that his friends and neighbors be exposed to these risks for a project where these impacts have not been addressed.

The contaminated drain waters from this project will go into Choteau Creek and Lake Andes. We are concerned about the impact this will have on people living nearby and on the wildlife populations in the Lake Andes National Wildlife Refuge.

Prior to authorization of this project, we feel that the rights of the Yankton Sioux Tribe to Lake Andes need to be finally resolved and all necessary permission be obtained from the tribe. Will the Yankton Sioux Tribe allow Lake Andes to be used as a toxic cesspool for agricultural wastes?

Our most pressing water development need in South Dakota is for adequate supplies of good quality drinking water on our farms, in our towns and in our cities. This is a critical public health need. For the same amount of money that this project costs, there could be a water supply system constructed to provide needed quality drinking water to over a thousand square mile area and directly benefit upwards of a hundred thousand people.

Thankyou for coming here today and holding this hearing.

In dealing with wetlands, the Bureau of Reclamation failed to
ddress the flood control, groundwater recharge, pollutant control and
esthetic values of wetlands that are lost by this project. They have not
llowed for mitigation of these lost values nor have they included
e costs associated with this. We feel these costs must be included
the Bureau's economic analysis.

United States Department of the Interior

BUREAU OF RECLAMATION
Upper Missouri Region
P.O. Box 2553
Billings, Montana 59103

IN REPLY
REFER TO: UM-780
563.

MAY 31 1985

U.S. FISH AND WILDLIFE SERVICE
RECEIVED
JUN 03 1985
SD (ES)
FIELD OFFICE

6/3 RIC

Memorandum

To: Field Supervisor, Fish and Wildlife Service, Pierre, South Dakota

From: Regional Planning Officer, Billings, Montana

Subject: Review Comments on CENDAK Fish and Wildlife Coordination Act Report of April 12, 1985

We have reviewed the subject document and have the following comments:

Page 4, Second Paragraph

Oahe and Lake Oahe Pumping plants would have capacities of 4,100 ft^3/s, and 2,400 ft^3/s at normal lake elevation. The capacities that are cited in the Coordination Act Report are at minimum pool elevation.

Page 6, Second Paragraph, Line 5

Delete the word "perched."

Pages 3 and 7

General comment.--The size of the project area needs to be consistently defined. Page 3 states it is approximately "120 miles long and 65 miles wide." This equates to 7,800 square miles or 4,992,000 acres. Page 7 states ". . .the project area encompasses approximately 5,100 square miles" which equates to 3,264,000 acres. These do not correlate with the service area descriptions, e.g., 390,000 acres or about 15 percent of the project area" (page 12). Converting the latter description gives a project area of 2,600,000 acres which is approximately the same as the project area size presented in our report (2,500,000 acres, page 3-2). The differences in the latter figures are probably due to rounding.

Page 21, General (Descriptions of Service Areas)

"Substantial fishery resource" and other similar terms need to be defined.

Page 30, Second Paragraph

Sample Data.--The use of both signup and nonsignup data to derive baseline habitat coverages is a different method than was used in the "Interim Fish and Wildlife Coordination Act Report" and the supplement thereto. These projections give a clear definition of future grassland values in the project area without irrigation development. These values were incorporated in all analyses of future conditions with and without irrigation development.

Future Without The Project Conditions, Second Paragraph.--With the numbers of actual and potential projects along the James River, e.g., South Dakota dredging program; South Dakota Water Delivery Study; Garrison Diversion Unit; etc., it does not seem reasonable to expect conditions will remain the same.

Future With Project Conditions.--Although it was previously stated, it might be well to reiterate that your analysis is based on full quarter sections rather than net irrigated acreage on irrigable lands.

Page 42, First Paragraph, First Sentence

Change to read ". . .natural channels, where possible, or would be modified as necessary to permit them to serve as outlets for all the surface and subsurface water from the project area." Also channel modifications would be only for the tributaries to the named tributaries. Comment also applies to page 56.

Page 43, First Paragraph

CENDAK Fish and Wildlife Coordination Act Report.--Statement about Bureau soil sampling in the project area is basically correct but only for the 10 percent hydrochloric acid extraction procedure where the objective was to simulate an extremely severe condition to strip any available element from the soil.

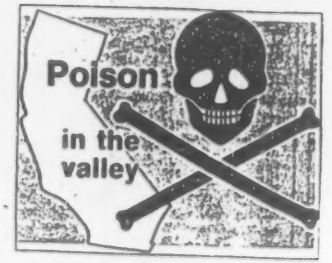
A one-part soil, one-part water extraction procedure was used to determine the concentrations of water soluble elements that would become environmentally available with irrigation. Levels of arsenic, iron, lead, manganese, mercury and cadmium that exceeded aquatic wildlife, livestock and/or domestic health/welfare standard are displayed in the enclosed table.

We have no indication from our soil analysis that the project area is a source of selenium. Under present or irrigated condition, how will concentrations of selenium increase in the river ecosystem by irrigation return waters where our analysis reveals there is no selenium present in the soil? If selenium is not present in the soil, how is the element dissolved and transported to Stratford Slough? The selenium intake in the Slough possibly could have come from drainage of selenium-rich areas north of CENDAK.

Page 44, Last Sentence

Delete.

28



Editor's note: Alerted to a looming crisis in the country's richest farming region, two United Press International reporters spent four months interviewing scores of experts and plowing through files to learn why poisoned wastes threaten to turn a huge federal water project into a calamity. They also examined how politics, money and influence affected the government's handling of the matter.

Rocky Mt. News

Wastewater brings death to wildlife refuge

By GREGORY GORDON and LLOYD G. CARTER
United Press International Writers

FRESNO, Calif. — A giant federal water project that spawned a corporate farming empire in the rich San Joaquin Valley may have created America's biggest toxic-waste mess and threatens to further damage President Reagan's environmental image.

Stinking, poisoned farm wastewaters in a government drainage canal, incomplete because of 20 years of bickering over cost and safety, are spewing into a national wildlife refuge, causing the genetic mutations and deaths of migratory birds at a key stop along the Pacific flyway.

Laced with salts, the trace mineral selenium and other toxins, the western valley's irrigation wastes have polluted 58,000 acres of duck habitat, killed fish, contaminated the food chain and fouled the valley's main river, government officials said.

Environmentalists, concerned about administration inaction, suggest the Interior Department has covered up the problem to protect the interests of a handful of absentee corporate farmers who fly Learjets, collect huge federal subsidies and form the backbone of the West's powerful agriculture lobby.

Worried that selenium is contaminating crops in the farming region that produces a quarter of the country's fruits and vegetables, the U.S. Geological Survey has begun testing lettuce.

Hydrologists warn the irrigation wastewaters also may be contaminating the valley's vast drinking water aquifer.

Southeast Asian refugees and other area residents regularly fish in the cement-lined canal, which has no warning signs.

Researchers say that although selenium is vital to humans in minute quantities and may be an effective anti-cancer agent, amounts larger than trace levels can trigger respiratory problems, hair and nail loss, birth defects, liver dysfunction and even death. Embryo deformities in chickens have been traced to steady exposure to levels of less than one part per million.

Facing a stream of news leaks about the problem, Interior Secretary William Clark has called for a summit meeting of top state and federal officials.

The only answer, however, may be shutting down tens of thousands of acres of farmland, an option Bureau of Reclamation officials, stressing the massive benefits of the rich cropland to the country, are loath to exercise.

"This is the way it always goes," said George Ballis, who has battled large-scale farming practices in the valley for years. "They're going to go for the immediate economic interest. It's a death trip. It's a poisoned valley."

Project planners originally wanted to build the drain canal to San Francisco Bay, where the wastes would be carried into the ocean, but they have been blocked for a decade by environmentalists. The Kesterson National Wildlife Refuge, a habitat for nine endangered species ranging from the blunt-nosed lizard to the Southern Bald Eagle, has become a stopgap terminus for the drain.

Meantime, the western valley is brimming with subsurface wastewater. If selenium levels in soils are as high as in preliminary tests, one government scientist said, "It's probably the world's largest groundwater contamination."

The poisoned groundwater and surface wastes also are flowing unchecked in rivers and sloughs toward another rich farm region, in the Sacramento-San Joaquin river delta to the North.

Environmental Protection Agency officials say they cannot take action because the farm lobby pushed through Congress a 1977 amendment exempting agricultural wastewater from the Clean Water Act. The state has taken little action.

Robert Broadbent, assistant secretary of Interior, has acknowledged no solution is in sight and any answer could cost billions.

Some U.S. Fish and Wildlife Service officials suggest the Interior Department has known for a long time of the selenium levels in water flowing from the San Luis water project to the 5,700-acre refuge. For 14 months, the agencies did not disclose to the California Regional Water Quality Control Board that at Kesterson in June 1982, they had found the highest selenium levels ever recorded in fish.

At least one Fish and Wildlife Service official was aware of elevated selenium levels in the water in 1981.

At minimum, area residents charge, officials of the Fish and Wildlife Service and the Bureau of Reclamation have been inept and negligent in failing for 24 years to ward off a drainage crisis despite dozens of warnings in scientific studies.

Rancher Willoughby Houk, who farms three miles from the Westlands, said much of the land never should have been farmed because of bad soils. Only a fraction of the area is hooked to the "master drain."

"They knew that the land would be useless in just a few years — less than 10 — unless they drained it," Houk said.

Criticism of the administration's handling of the crisis comes at a time when Reagan has been campaigning on his environmental record, even visiting an East Coast wildlife refuge. Interior Department spokesman Rusty Brashear said in late July Clark had not informed Reagan of the situation.

Clark, who recently discussed the issue with big growers at a Republican fund-raiser in Fresno, declined to be interviewed, saying he is a defendant in a suit alleging the pollution of private land near Kesterson.

pg 1 of 3

IN THE western valley, there is evidence the government has bowed repeatedly to special interests rather than heed environmental warnings.

UPI found:

● Officials of the Fish and Wildlife Service and Bureau of Reclamation, who reported to Clark and his predecessor, James Watt, assumed two to three years ago the water eventually would be toxic. Sources charged reports were suppressed or softened to defuse opposition to the drain.

● For 10 years, the California state agency regulating water quality control has failed to establish discharge standards for farm wastewater.

● Many 1978 recommendations by a congressionally formed San Luis Task Force, including a call for EPA pollution standards for the drain, have been ignored.

● Other farmers near the Westlands are channeling wastewater through hundreds of miles of dirt ditches to the San Joaquin River, making it a de facto drain. Fish populations have dropped. Farmers downstream in the South Delta rate the degraded water is costing $10 million a year in lost production.

● The Interior Department has allowed wealthy corporate farmers to control the Westlands. The growers have flouted the 160-acre rule and defeated federal efforts to require them to pay the full cost of water, weakening the government's ability to finance the drain. Delays in enforcing the 82-year-old acreage law permit the biggest landholder, Southern Pacific Railroad, to own 100,427 acres, most of it cheaply irrigated.

● While growing surplus crops on federally irrigated land, these farmers have received tens of millions in subsidies and low-interest loans from the Agriculture Department's Payment-in-Kind program, the Soil Conservation Service, the Farmers Home Administration and other agencies.

● Big growers have parried most crackdown attempts, hiring dozens of lobbyists and sweetening campaign coffers of men like Reagan and Rep. Tony Coelho, D-Calif. Coelho, Sisk's former top aide, represents the Westlands and is well placed as chairman of the Democratic Congressional Campaign Committee.

● Corporate farmers also dominate local water district boards and policies favor them. Board members in the Grasslands district surrounding Kesterson, where fish are dying, have financial links to large growers.

page 3 of 3

BROADBENT, COMMISSIONER of the Bureau of Reclamation until his July 16 promotion, acknowledged the problem is serious — but denied a cover-up.

"I'm not aware of any cover-up, and I guess I'd be responsible since I've been here since 1981," he said in a Washington interview. "But I think we've gradually found ourselves getting into a tougher problem every time we did a little more scientific work."

David Houston, chief of the bureau's Sacramento regional office, said, "We will move with deliberate speed. We are moving very aggressively. You don't willy-nilly take action to close businesses down."

The issue pits big farmers against small farmers, state agencies against federal agencies. It has created an awkward alliance between duck hunters and bird lovers.

The San Luis unit, the last major segment of the 1930s multibillion-dollar Central Valley Water Project, was steered through Congress in 1960 with the promise it would save farming in the sun-scorched, groundwater-depleted western valley. Farmers had tapped so much water from their wells that hydrologists found the ground had sunk, collapsing the size of the underground aquifer.

The 1960 congressional authorization for the San Luis unit provided for fish and wildlife protection. Construction of the $483 million unit, now serving 650,000 acres, was barred until steps were taken to set up either a joint state-federal drainage system, or a federal drain.

ITS CONGRESSIONAL father, retired Rep. Bernie Sisk, D-Calif., promised there would be thousands of farms in the Westlands Water District, but 236 operators who grow more than $500 million annually control the land.

Fish and fowl are getting tainted water. And the proposed 188-mile federal drain is less than half-finished, although the water delivery system was built and opened in 1967. The drain is at least a decade from completion and could cost more than $1 billion.

If the selenium problem persists, cleaning the drain water could cost another $2-$3 billion, according to Houston. It costs $7,000 to clean up an acre foot of wastewater at an experimental desalting plant near Kesterson. The same amount of water costs a farmer $7.50 on delivery.

The pollution problems are not confined to the West Side. On the valley's eastern flank, heavy use of pesticides has led to contamination of drinking water wells. Suits are filed almost weekly.

In the 572,000-acre Westlands Water District, dominated by cotton and feed grains for export markets, wildlife is all but extinct.

SELENIUM, ONCE safely locked in the western valley's alkali soils, appears the biggest menace, with toxicity in animals traced to levels as low as 4 to 5 parts per million.

Federal officials last year disclosed that they had found the highest levels of selenium ever recorded, 53 parts per million, in mosquito fish at Kesterson.

"When they dug those canals out there they opened up a Pandora's box," said Dr. Arthur Kilness, a South Dakota physician conducting a Harvard University study on selenium's effects on human health and also testing Kesterson birds. [illegible]

Environmentalists charge the growers and federal agencies have disregarded migratory bird treaties, other wildlife protection laws, state water quality control laws and the public trust doctrine requiring government agencies to protect public resources.

THE FARMERS, who receive Northern California water at bargain-basement prices, blame the government for failing to complete the drain. They argue that if land is forced from production, it could trigger a chain-reaction economic catastrophe in the valley's $7 billion-a-year agriculture industry.

"They ought to do what the government agreed to do in the first place — that they'd put in the drain," said Westlands farmer John Diedrich, 41.

Despite the past studies, Clark told the Fresno fund raiser no action would be taken pending more research that could take two years.

Even in 1978, when Reagan was California governor, the state Department of Water Resources warned that failure to solve the drainage problem could cause "eventual degradation of the 500 million acre foot groundwater storage reservoir" under the valley and spoil much of the San Joaquin River.

Federal groundwater studies now are underway, but only one deep water well that taps the underground aquifer is being tested.

page 2 of 3

POISON IN THE VALLEY

Selenium dose is difference between birds' life or death

WASHINGTON (UPI) — Selenium, a rare and still misunderstood trace mineral blamed for mutations in birds at a California wildlife refuge, also is a vital nutrient and may reduce the risk of cancer.

Scientists have known since the 1940s that excessive amounts of selenium in plants consumed by Midwest cattle caused symptoms such as hair loss, weight loss, failing coordination, nervous system problems, respiratory failure, liver dysfunction and death.

Research on the effects of substantial selenium ingestion by humans has been scarce, but the Environmental Protection Agency said it is so potent the recommended drinking water standard is 10 parts per billion.

Dr. Frederick Oehme, a professor of toxicology at Kansas State University, said animals or people exposed to 100 to 200 parts per million of selenium in their diet will, within months, begin to lose weight dramatically, suffer abdominal pain and possibly have vomiting spells.

In severe cases, he said, the liver will be "unable to clear the wastes properly" and it may be difficult "to maintain life."

When levels reach 500 to 1,000 parts per million, "it affects the brain" — horses may rear up and charge their owner, or attempt to break out of a stall, he said. Within two to four days, they will die. He said humans likely would have similar manifestations.

Dr. Paul Newberne, a scientist at the Massachusetts Institute of Technology, warned that selenium can interact with other heavy metals, such as chromium, to create even more toxic effects. Chromium and other trace minerals have been found in water at the Kesterson National Wildlife Refuge in the San Joaquin Valley.

A South Dakota physician, who is conducting a Harvard University selenium study on [illegible] man health effects of selenium, al[illegible]

Deformities in this coot have been blamed on selenium and other toxins in the water at Kesterson National Wildlife Refuge.

ered samples of deformed birds from Kesterson. Dr. Arthur Kilness said he is working with the U.S. Fish and Wildlife Service.

He said selenium has been used in chemotherapy for treating cancer patients, and 50 to 150 micrograms of selenium are "probably necessary in human beings to protect against deficiency syndromes."

MIT researchers and other universities said rats deprived of selenium have higher cancer rates than rats given normal or above-normal amounts.

Selenium was discovered in 1817 and deposits in the earth are associated with volcanic activity. It may be extracted from the soil with water.

It has many industrial uses. It is a common ingredient in photoelectric cells because it alters its electrical resistance upon exposure to light.

Selenium often is added to copper and stainless steel to increase their machinability, and is used to color glass. It is an additive in vulcanized rubber, increasing abrasion resistance, and in photographic and printing reproduction chemicals.

Elemental selenium, while known for its foul smell, is not considered poisonous but many selenium compounds are quite toxic.

Cleansing soil releases toxins

By LLOYD G. CARTER
United Press International Writer

FRESNO, Calif. — Toxic western San Joaquin Valley drainage waters, blamed for bird mutations and fish kills at the Kesterson National Wildlife Refuge, are produced by the irrigation and "soil-washing" practices of growers.

Growers have found they can "wash" — cleanse — their topsoils of salts by applying gypsum and huge amounts of water. The problem, according to environmentalists, is that the "dirty" water produced by the soil-washing process is ending up in the refuge or in the nearby 52,000-acre Grasslands Water District and the San Joaquin River.

The gypsum, or calcium sulfate, pries loose plant-inhibiting sodium from the topsoil and carries it downward with the irrigation water. Last year, California growers applied nearly a million tons of gypsum, most of it in the western valley. The $19 to $18 charge per ton of gypsum is tax deductible under federal law. [illegible]

Because clay layers under the west side block downward movement of the [illegible] it eventually rises to the surface, threatening the roots of crops. Growers have responded by installing hundreds of miles of subsurface tile lines to drain or extract the element from their waterlogged fields. This "perched" water or subsurface drain water then is pumped into ditches flowing into the refuge or the San Joaquin River.

In addition to sodium, the ancient seabed soils of the west side contain high levels of selenium, boron, arsenic, molybdenum and other trace minerals, as well as residues of DDT and other pesticides. Selenium, possibly in combination with other toxins, is believed to be causing the mutations.

The groundwater below the fields rises and falls from season to season, like the levels in a washing machine, collecting more of these potentially dangerous trace minerals.

In the last five years, subsurface tile drain systems have been installed on thousands of acres. Farming officials said 300,000 to 500,000 acres eventually may need tile drain systems. Environmentalists said so much "dirty" water could pollute, even the ocean [illegible] want to put the wastewaters.

Second of five parts

Cover-up suspected in pollution of refuge

By LLOYD G. CARTER
and GREGORY GORDON
United Press International Writers

LOS BANOS, Calif. — Janette Freitas and her husband, Frank, watched, bewildered, as the trees and flowers outside their farmhouse withered and died. Dozens of their cattle lost weight and shed yellowed hair.

Some of the emaciated animals, strangely drawn to poisoned water at the edge of the Freitas ranch, keeled over dead.

To add to the Freitas' fears, their grandson, 10, discovered dead and deformed baby ducks on the banks of a pond on the refuge.

"We've probably had 15 to 20 head of cattle die," said Janette Freitas, during a recent interview. She lives with the stench of the fouled farm wastewater seeping from the bordering Kesterson National Wildlife Refuge, 110 miles southeast of San Francisco.

Yards away on the refuge, a key wintering spot for fowl on the Pacific flyway, large numbers of birds have been born with genetic mutations, thousands of others have died.

Government scientists blame the toxic trace mineral selenium, carried to Kesterson in drain waters via a giant, unfinished canal running from the nation's richest farm county 85 miles to the south.

Recent U.S. Geological Survey studies indicate selenium-tainted water draining from western San Joaquin Valley farmlands not hooked to the drain also may be contaminating an area 10 times the size of the 5,700 acre refuge.

In addition to selenium, the reeking waters are laden with salts, pesticides and such other trace minerals as arsenic, cadmium, molybdenum, lead and chromium.

"If the cattle start to drink it, my husband has to move them away from it," Freitas said. "There's something about it. If they start drinking it, they have to have it.

"It's like somebody on dope. You can't get them away from it."

Freitas contends the Bureau of Reclamation knew years ago it would wreak environmental havoc when it began using Kesterson as a temporary evaporation pond for the farm drain waters, originally destined for San Francisco Bay.

"They've pretty well made a mess of our ranch," she said, adding that she is considering suing the federal government.

page 1 of 3

Environmentalists, an outspoken congressman and some field officials for the U.S. Fish and Wildlife Service agree with her that a huge federal project to bring irrigation water from Northern California to the sunny San Joaquin Valley may have backfired and created a colossal toxic waste dump 10 times the size of the refuge.

They suspect a cover-up by Interior Department officials who bowed to pressure from big growers in the western valley, the backbone of the nation's agriculture lobby, and turned Kesterson into a stopgap repository for the drain waters.

"Everybody knew that the problem with the drain was going to arise," recalls Daniel Beard, a former deputy assistant secretary of the Interior Department.

"When the (water) project was first proposed, the question was, 'What are you going to do with the runoff?' I think people knew it was going to be bad. People just said, 'We'll fix that next year.'"

There is evidence the Interior Department for years has played down — and at times concealed — knowledge of the inevitable consequences of its decision to permit large-scale farming on soils saturated with salts and toxins without first building a drainage system.

During a four-month investigation, UPI learned:

● A 1939 U.S. Department of Agriculture study of the shale layers in the Coast Range mountains bordering the western valley revealed selenium levels as high as 20 parts per million. The mineral normally is barely detectable [illegible]

● At least a dozen state and federal studies, dating back 20 years, warned of [illegible] concentrations of salts and trace minerals in western valley soils. A 1959 study by the U.S. Geological Survey warned that groundwater in the 8,000 acres being drained today was "extremely poor" and agriculture would require extra water to reduce salt concentrations.

● Congress, authorizing the project in 1960, considered drainage so vital that language guaranteeing it was placed in the authorizing bill. However, the Bureau of Reclamation permitted the 500,000-acre Westlands Water District to illegally expand in the early 1960s, diverting drain money to construction of water delivery pipelines for 156,000 additional acres.

● A 1978 Congressional Task Force concluded the Kesterson Reservoir never was part of the original 1960 authorizing legislation.

● The task force also said it was "presumptous" for the bureau to expand the water delivery system knowing that remaining funds "would then be inadequate for the . . . drainage system."

● Field notes dated June 17, 1981, and belonging to Norm Cederquist, a Bureau of Reclamation employee, reported measurements of 395 parts per billion of selenium near the refuge holding ponds, and as high as 485 parts per billion in one of the ponds. David Houston, who became head of the bureau's Sacramento regional office last August and served previously as an aide to bureau Commissioner Robert Broadbent in Washington, said he was unaware of the notes.

● According to an internal U.S. Fish and Wildlife Service chronology of the drain water problems, Kesterson mosquito fish tested in June 1982 showed the highest levels of selenium ever reported in fish, 53 parts per million, far above the danger point of 2 to 5 parts per million.

● Bureau officials failed for 14 months to tell state water-quality officials about the high selenium levels in fish. "If that information was not provided, it should have been provided," Houston said. He said he did not learn of the laboratory results until taking the job last year. But Broadbent, now assistant interior secretary, said in an interview he was aware of the mosquito fish selenium levels. Fish and Wildlife Service Director Robert Jantzen said he did not recall learning of the findings until last fall.

● In an October 1983 memo to a superior, environmental assessment specialist Felix Smith of the U.S. Fish and Wildlife Service's Sacramento office criticized as "business as usual" the bureau's strategy for responding to selenium contamination by burning foliage and spraying chemicals to discourage birds from nesting. "One thing we don't need is more poison spread around the area," wrote Smith, expressing concern the action could be seen as "a cover-up for what has happened to the nesting aquatic birds at Kesterson."

● Sources at the Fish and Wildlife Service said the agency has sought for some time to resolve the drain problem but has faced "stonewalling" from the bureau. Both agencies report to Interior Secretary William Clark, who must decide conflicts between environmental and agricultural interests. The sources said the Bureau of Reclamation — with a burgeoning budget for western water projects that is rising faster proportionally than the Pentagon budget — usually prevails.

● Bureau of Reclamation water-quality tests failed to disclose the presence of high selenium levels at the Kesterson reservoir. The agency asserts the danger was not uncovered until analytical chemists at the U.S. Geological Survey and the Fish and Wildlife Service publicly reported that finding earlier this year. Marvin Fretwell, a water scientist for the Geological Survey, said that at the bureau's request, his agency reviewed the bureau's laboratory procedures and found them to be unprofessional, identifying only "2 (percent) to 5 percent" of the actual selenium in the wastewater. "They didn't do a cover-up," Fretwell said of the lab. "They had some severe laboratory error."

● Sargent Green, an official of the California Regional Water Quality Control Board in Fresno, called Kesterson "a poor location in the first place" for a refuge because of porous soils and subsurface continuity with the San Joaquin River. Green said the Kesterson site selection was "a political decision," because it did not impinge on surrounding privately owned duck-hunting areas. Green said the bureau will "probably abandon" Kesterson.

page 2 of 3

● William Sweeney, who retired in 1983 as area director for the Fish and Wildlife Service, has openly criticized the bureau for succumbing to pressure from growers. "They've got enough muscle that they can pick up the phone and call an assistant secretary in Washington. Some of them can call the secretary," he said that after he testified in 1982 in Sacramento that the government was failing to protect state water quality, the reaction was predictable — grower complaints to Interior Department officials working their way up the bureaucracy until he heard from his boss.

● Federal sources said officials in Washington softened language in news releases about the Geological Survey's findings with respect to selenium in the valley.

Some experts feel that regardless of whether they were acting intentionally or negligently, government officials broke both federal wildlife laws and state water quality statutes by allowing the wastewater to flow into Kesterson.

George Coggins, a law professor at Kansas University who is an expert on the Migratory Bird Treaty Act, said if it can be proved the wastewater killed ducks at the refuge, "then clearly, at least one, and probably four or five different laws are being broken, although who they are being broken by is yet another question."

The 1918 treaty makes it a crime, punishable by up to six months in prison, to kill a migratory bird.

Asked repeatedly if alerts from the Fish and Wildlife Service had been ignored by the bureau, Jantzen said "I don't really think it serves much of a useful purpose to point fingers. Administrative decisions were made. Perhaps those warnings were thought of, perhaps they weren't."

Kesterson manager Cary Zahm said in a recent interview that the toxic water problem has reached critical proportions and that the refuge may have to be closed and cleaned up.

Even Rep. Tony Coelho, D-Calif., chairman of the Democratic Congressional Campaign Committee who represents the area and gets hefty campaign contributions from the big growers, questions the bureau's motives.

"The Department of Interior has permitted this problem to develop, and the only question is, 'Did they do it deliberately or inadvertently or because they weren't doing their job?'" he asked.

98

Beard, the former deputy assistant secretary of the interior, who left the agency before the selenium revelations, said: "The facts are there for anybody who wants to uncover it." The scientists out there, they just poke along year after year, year after year.

"A lot of times, people (in Washington) don't ask the right questions. It may be that the people ... consciously didn't ask certain questions because they didn't want to get [illegible]

Rep. George Miller, D-Calif., whose district in the delta would be on the receiving end of a completed drain, charged the bureau with "suppressing the evidence" on the dangers of the pollution. The delta already is getting toxic runoff from the upslope farming areas.

The original proposal for the federal San Luis water project called for California to build a master drain for all of the western valley's farm wastewater.

In 1967 under Gov. Ronald Reagan, California withdrew from the drain plan. Bureau engineers then announced they would build their own drainage canal to the Sacramento-San Joaquin river delta, where the waters could be safely flushed through San Francisco Bay and diluted in the Pacific Ocean.

Bureau officials came up with the idea of a regulating reservoir to control the flow of the waste-water and condemned part of the 6,500-acre Freitas ranch for a site.

In 1970, officials of the Fish and Wildlife Service, eager to preserve the dwindling winter habitat for migratory birds, signed a cooperative agreement with the bureau to operate Kesterson as a wildlife refuge, believing the drainwaters would preserve marshlands.

The farmers would be helped and wildlife would be helped, they reasoned. It didn't turn out that way.

When Freitas flicks on her tap, the water looks milky.

"I'm afraid to drink our water any more," she said. "Sometimes I forget.

"Every time I water my new plants, they die. I've planted probably eight to nine dozen plants around here, and every one of them is dead. Plus, we're having trees die out here every day."

Last spring the rank water was blamed for triggering a cholera outbreak among mudhens on the refuge. Freitas said crews from the game warden's office collected 2,900 dead coots on her property one day and were still counting the next day.

Freitas recalled that "a couple of busloads of bird watchers" visited the refuge, and "within about 10 days they (the bureau) had fresh water coming in. They kept it that way for a couple of months while people were coming out here looking."

She said goverament officials pumped the wastewater into a nearby slough that drains into the San Joaquin River, "and that must have been against all the rules. Those pumps were working all night."

She said that when the bird-watching mason ended, "They let it go right back the way it was."

The state's Greco confirmed 2,700 acre feet of water was pumped from Kesterson into a nearby slough in March 1983, but said it was done to protect levees from high winter floodwaters. He said the state relied on Bureau of Reclamation tests of the water in granting a permit.

"I'm sure the water was all tested before it was dumped," the bureau's Houston said. But noting the laboratory failures, he said, "Whether the selenium level (reported to the state) was correct, I don't know."

page 3 of 3

Some farmers get fat off U.S., poison land

By GREGORY GORDON
and LLOYD G. CARTER
United Press International Writers

WASHINGTON — In 1959, Rep. Bernie Sisk, D-Calif., pledged on the House floor that a giant federal water project would produce thousands of family farms and let California's parched western San Joaquin Valley flourish.

Sisk was right about one thing. A quarter-century later his legacy is an agricultural bonanza — the nation's most lucrative farmland. It dominates the cotton market and sprouts scores of crops in an ideal, eight-month growing season.

Contrary to Sisk's rosy projections, however, there are few farmhouses in sight on the booming West Side. Most of the benefits of the San Luis water project are reaped by 28 to 60 big growers who run farms factory-style.

In the 573,000-acre Westlands Water District, where annual crop revenues exceed $500 million, these wealthy few fly Learjets, drive Mercedeses and control more than half the land.

Their profits since the project's inception have been "beyond any amount you could imagine — billions of dollars," asserts John Lawrence, top aide to Rep. George Miller, D-Calif., who has battled the Westlands over water quality.

Environmentalists say the Westlands growers also are destroying a wildlife habitat and may be polluting much of the western valley with their toxic waste water, some from fields that scientists say never should have been farmed.

The Westlands breed of farmers, who serve as the backbone of the nation's agriculture lobby, usually can fend off such challenges by flexing their Washington political clout.

Pressured by bogrammen and farm lobbyists, federal agencies lean their way, delivering a stream of government largesse.

The San Luis project, part of the Bureau of Reclamation's colossal Central Valley Project, has carried trillions of gallons of water to their land in canals from Northern California reservoirs since 1967.

The land sold for as little as $100 an acre in the 1950s before the water arrived. Now appraisals place its value at $3,000 to $4,000 an acre.

In addition, the government has pumped out more than $1 billion in subsidies, including what one congressman calls "ridiculously cheap" water and tens of millions of dollars in farm program money.

Uncle Sam could be cornered into paying another $1 billion-$4 billion to drain or treat the toxic farm wastewaters now being temporarily ponded at the Kesterson National Wildlife Refuge, where ducks have [illegible] and fish have died.

In authorizing the $485 million water project in 1960, Congress held farmers to a 1902 law limiting them to discounted federal water for 10 years, after which they would qualify for a water price break for 160 acres per family member and would be required to sell the rest. The 160-acre limit and the bargain prices were aimed at ensuring growth of family farms.

Today, the biggest growers average more than 10,000 acres. They have circumvented the acreage limitation and cashed in, longtime observers say, with sheer political muscle that at times has awed and stunned their foes.

"The level of political force that they were able to muster was greater than anything I ever saw from the oil lobby," recalls Guy Martin, an assistant secretary of interior in the Carter administration.

Another observer, decrying massive federal subsidies to a select few, said: "It's different than food stamps. These guys take it in the form of water and convert it to money. There's a multi-layering of subsidies to insulate these individuals from risk.

page 1 of 4

87

"These guys do one thing and they do it well. They farm the government. The government does everything but give them the land."

The Westlands farmers get government water at a fraction of the real cost because they are charged no interest, with a 50-year repayment schedule based on their "ability to pay."

The General Accounting Office found in 1981 that less than 10 percent of the cost has been repaid. Another congressional study said water subsidies will total $769 million for the Westlands project, amounting to $1,340 per acre, including $610 for the delivery system and $930 for the water.

In 1983, Westlands farmers also received $72 million in free cotton and wheat from the federal government in return for idling 54,000 acres as part of the Agriculture Department's Payment-In-Kind — PIK — program. Although federal law prohibits recipients of government water from growing surplus crops, Westlands growers have capitalized on loopholes.

There are more subsidies: $47.9 million in Farmers Home Administration loans to 25 Westlands growers since 1962, including $13.7 million to Jubil Farms Inc. alone; Economic Development Administration loans for farmers to build hotels and meat-packing plants; a barrage of free technical assistance from the Soil Conservation Service and other Agriculture Department agencies; and even federal tax breaks for manure and other fertilizers.

Here is the picture of the power of a few factory farmers painted by a four-month United Press International investigation into evidence the federal water projects have poisoned tens of thousands of acres with toxic farm wastewater:

● Federal Election Commission records show the corporate farmers, including firms such as the J.G. Boswell Co. of Los Angeles and the Salyer American Co. of Corcoran, Calif., funnel hundreds of thousands of dollars in campaign contributions to political allies. Although many contributions are untraceable, UPI toted $1,456,425 in donations to Republicans and Democrats alike by West Side grower interests, their political action committees and PACs representing Westlands-dominated farming groups from 1978-82. The PACs alone contributed $683,284 to California's congressional delegation.

page 2 of 4

● In 1982, Boswell and Salyer spent $2 million on an advertising campaign that helped defeat a state proposal for a "peripheral canal" to carry water around the Delta to Southern California. In a June article, Merrill Goodall, a member of the California Water Commission, said big growers control the state's economy and political structure.

● Rep. Tony Coelho, D-Calif., Sisk's former top aide whose district includes the Westlands, not only gets heavy campaign support from the big agricultural interests but also is in a position to influence — if he chooses — other congressmen as chairman of the Democratic Congressional Campaign Committee. He raises and doles out funds, targeting money to party members in tight races.

● In 1982, before Congress revised the 1902 law to increase to 960 acres the allowable limit for cheap water, dozens of lobbyists swarmed the Capitol on behalf of the West Side farmers. Growers won passage of an amendment allowing them to obtain the low water prices for unlimited leased lands. "I think when you give them unlimited leasing, that's the perfect opportunity to circumvent the law," Cecil Andrus, Interior secretary during the Carter years, told UPI. At one time, five former congressmen lobbied for the West Side growers. Six lobbyists reported to the House clerk's office expenditures of $201,302 on behalf of West Side interests between 1978-82. Many failed to register or under-reported their expenditures.

● The growers form political allies in other ways, too. Valley farmers say they have watched wealthy growers fly President Reagan's aides aboard private jets. Records in the California secretary of state's office show a number of farmers flew Republican Gov. George Deukmejian around the state during his 1982 campaign.

● The Bureau of Reclamation, which negotiates the cost of government water with the Westlands, has agreed to bargain prices for the water and made numerous other concessions, some former federal officials say. In 1965, five years after the San Luis project was approved for a 500,000-acre area, the Westlands Water District revamped the boundaries to include water for another 156,000 acres. At the time, Interior Secretary Stewart Udall went along with the move. In 1978, the department's solicitor, Leo Krulitz, ruled the expansion illegal but the department felt it was too late to crack down. By diverting money to build water pipelines for the expanded area, the bureau exhausted funds for construction of a drain — triggering today's problem.

● Critics say bureau officials regularly are in contact with growers or their representatives. Interior Secretary William Clark and Robert Broadbent, who until July 16 was bureau commissioner, joined 250 guests at a June fund-raiser in Fresno for Rep. Charles Pashayan, R-Calif. Clark met for an hour with prominent growers.

● William Sweeney, who oversaw California national wildlife refuges before retiring from the U.S. Fish and Wildlife Service, said the big irrigation districts have "got enough muscle that they can pick up the phone and they can call an assistant secretary in Washington. Some of them can call the secretary." He said after he testified in Sacramento in 1982 about the government's duty to protect state water quality, he could have set his clock for the reaction — complaints from Westlands, officials he dubbed "water hustlers" worked their way up the bureaucracy until he heard from his boss.

The San Luis project was engineered in 1960 by a triumvirate of well-placed Democratic California congressmen backed by the big growers — Sisk, chairman of the Rules Committee; former Rep. John McFall on the Appropriations Committee; and former Rep. Biz Johnson on the Interior Committee.

The three won support from a cross-section of other congressmen, although the booming Westlands threatened the market for farmers in other regions.

Daniel Beard, former deputy assistant secretary of Interior, says such water projects became "a political symbol" of western power.

Sisk, McFall and Johnson had paid little heed to environmental alerts. By 1962, two years after the bulldozers started moving, government scientists were warning any drain could contaminate the food chain.

"While these chemicals may not be fatal to the original animal, fish, birds or mammals (including man) who eat the affected tissue may receive lethal doses," Travis Roberts of the Fish and Wildlife Service wrote in a 1962 memo to the regional chief of the Bureau of Reclamation.

Still, the big Westlands growers plowed ahead. They hired Ralph Brody, a former regional director of the bureau, as manager and legal counsel of their water district, paying him $81,250, highest public salary of any public servant in California.

page 3 of 4

Brody, now deceased, helped win approval for the expanded Westlands district, which incorporated land that scientists had warned contained some of the worst toxins and would only aggravate the drainage problem.

By the late 1960s, most of the water delivery pipelines were in place. Salty, toxic, irrigation water was accumulating underground and threatening the root zone of crops. The bureau began building a 188-mile drain canal leading toward San Francisco Bay, but halted work in 1971 in the face of environmental opposition and shrinking funds. The waters swelled.

Meantime, corporate farmers fought to keep their land. Under the law affecting farmers in 17 states, they faced a 10-year deadline to dispose of lands exceeding 160 acres per family member or pay the full price of water for those acres. The bureau was slow to enforce the law.

Environmentalist George Ballis, who watched big growers conceal land ownership in paper deals and freeze out small potential buyers, formed the National Land for People and went to court.

U.S. District Judge Barrington Parker in Washington ordered strict compliance in 1976, but directed the Interior Department to draft regulations for the selloff. The water district then sued Interior Secretary Andrus, demanding an environmental impact study.

The growers, fighting to beat the regulations with legislation, took aim at their few political enemies.

Former Rep. John Krebs, D-Calif., who represented part of Fresno County, said he accepted an invitation to tour Boswell's Boston Ranch in the Westlands in 1978. Krebs said one of the Salyer brothers and a Boswell official were on hand, and pressed him to support their legislation.

"I said, 'I can't commit myself,'" Krebs recalled.

He said that fall the Salyers sent him a $1,000 unsolicited campaign contribution. He said he returned it because the matter was pending. "From that day on," Krebs said, the Boswells and Salyers marked him as a target. He said he later traced $27,000 to $29,000 in Boswell and Salyer contributions to his opponent, Pashayan, who beat him in the fall.

"All the West Side bandits, they all contributed to Pashayan, even though they weren't in his district," Krebs said.

Andrus left office before taking final action to implement regulations for enforcing the 160-acre limit. Board said he believed an election-year trip to the Westlands by Rosalynn Carter and some well-timed contributions to Carter's re-election campaign gave growers added influence. Andrus said the Westlands suits blocked

88

Corporate-farm toxins imperil wildlife

By LLOYD G. CARTER
and GREGORY GORDON
Associated Press Writers

LOS BANOS, Calif. — Thirty years ago, Bing Crosby and Clark Gable owned duck clubs in the lush marshlands of western Merced County. Millions of migratory birds darkened the autumn skies. The hunting was easy.

Burt Reynolds was among the elite who hunted this key stop on the Pacific Flyway last year. But it wasn't the same.

Club owners say flocks have dwindled sharply. Birds in the nearby Kesterson National Wildlife Refuge — repository of toxic farm wastewater arriving in a cement-lined canal — are being born without legs, eyes and beaks. On private land, fish and frogs have disappeared and some cattle have died.

One angry landowner, Jim Claus, has accused officials of the 52,000-acre Grasslands Water District of bowing to corporate farmers. The water district was set up more than 30 years ago to preserve the marshes adjacent to the refuge for wildlife.

Claus says farmers use the historic area as "one vast toxic-waste dump" for drainage waters contaminated with selenium, other potent trace minerals, salts and pesticides collected from the soils in their cropland.

In lawsuits, Claus contends California water quality laws and federal wildlife protection laws have been violated, destroying his land shortly after he pledged to the government that he would preserve it as duck habitat.

Claus alleges that drinking-water aquifers are threatened, the San Joaquin River has become a sewer and federal officials such as former Interior Secretary James Watt have covered up the extent of the poisoning resulting from a massive federal irrigation project.

An aide said Watt, now a consultant in Washington, would not comment.

In a year when Ronald Reagan is campaigning on his environmental record, Claus' suit has created a furor. Watt's successor, William Clark — named as a defendant — declines comment. Interior officials say privately that they worry the valley crisis will erupt into a national controversy.

"I'm going to shut them down," vowed Claus, who estimates that it could cost at least $50 million to clean up the Grasslands. He said he rejected government suggestions that he settle his suits.

Most duck clubs are operated by absentee landowners who, Claus argued, were tricked by government assurances that the water they were getting was safe.

Top regional officials of the U.S. Fish and Wildlife Service met in Portland, Ore., late in July and discussed spending $420,000 to hire crews with noise-making machines to scare birds away.

"The possibility exists," conceded director Robert Jantzen of the Fish and Wildlife Service, when asked about shutting down Kesterson. The refuge was established in 1970 on Bureau of Reclamation land originated for a "regulating reservoir" to control wastewater flows.

Jantzen, whose office has a picture of the ousted Watt, said polluting the refuge will persist "in one form or another" while more studies are done. Environmentalists argue that 30 years of studies should be enough.

Claus said the wastewater contains millions of tons of salts and other toxins, and that federal officials knew it was just a matter of time until "they salted up the Grasslands."

The most ominous trace mineral is selenium, necessary in minute levels but toxic in animals at over 2 parts per million. Selenium is blamed for bird mutations. Levels as high as 53 parts per million were found in Kesterson mosquito fish, highest recorded in living fish.

Scientists say selenium is concentrating as it moves up the food chain. A Fish and Wildlife memo warned in 1962 of such dangers.

"I won't eat a fish that's caught here in the valley," said Leon Littlefield, retired manager of Kesterson. "You're taking your life in your hands."

Kesterson gets the drainwater from a federal canal hooked to 8,000 acres 85 miles south in the Westlands Water District of Fresno County.

Aides to Rep. Miller say Congress' 1982 revisions of the reclamation law, signed by Reagan, raised water prices only because Miller demanded a tougher federal stance. However, the changes also increased the allowable acreage limit to 960 and lifted leasing restrictions, assuring corporate farmers a future.

For some, the 10-year selloff deadlines already have stretched to 18 years. Parker did not end his moratorium until this spring, and the Interior Department has yet to lift its own freeze on land sales.

Now the growers' political friends in the administration are moving to relax the 1982 law. They want to eliminate a key "hammer clause" giving farmers five years to decide whether to fall under the old, 160-acre limit or to pay higher rates under the reforms allowing 960 acres.

Broadbent, assistant secretary of interior for water and science, said the new law is "probably an unconstitutional breaking of contract law" because it strictly limits owners to 160 exempt acres. He said it would require the bureau to "breach" original contracts providing water for $7.50 an acre foot.

Miller said such decisions have been made "behind closed doors" in the past, and will be made only in public in the future.

As for the drain, Board predicted the problem will linger until it gets a "crisis solution that will probably be very expensive, and the expense won't fall on those who are causing the problem."

Retired Rep. Bizz, 73, who suffered a stroke three years ago and is in failing health, still defends the San Luis project "for bringing billions of dollars into the valley."

But, he said, if he had it do over again he would include stringent water quality standards.

page 1 of 3

page 4 of 4

Drainage water in the surrounding Grasslands flows naturally from an estimated 200,000 acres of fields in nearby Fresno and Merced counties. Much of this wastewater is reaching the San Joaquin River, harming fish populations and damaging crop production downstream.

Grasslands officials have contended that wastewater they receive is better than the concentrated wastes arriving at Kesterson.

But recent U.S. Geological Survey studies show that selenium may be spread through the western valley, and federal officials say the drain water flowing to the Grasslands also is toxic.

Grasslands director C.E. Van Atta, an attorney, contends that the sun-baked marshlands district was forced to accept farm water 30 years ago when fresh water from the San Joaquin River was diverted.

But Claus says Grasslands officials, including Van Atta, repeatedly have let growers violate district water quality standards to save $10 million a year — what it would cost if growers ponded and diluted the water.

Martin Winton, who founded the Grasslands Water District 30 years ago, says Van Atta and the board's counsel have apparent conflicts of interest.

Van Atta is a partner of Jess Telles, one of the biggest growers in the valley, in a prominent Los Banos law firm.

Van Atta said in an interview that he or his firm represented only two drainage districts. He said he excuses himself from board decisions on the Panoche Water District and that his firm represents the Central California Irrigation District only in "internal matters," not water issues.

However, a maverick Grasslands director, Carter Harrison, said the Van Atta law firm serves as counsel to "a lot of entities" draining into the Grasslands.

Harrison said of the pollution problem, "Jim Claus found out about it first, and he started raising hell. He's absolutely right."

Before the selenium issue became public last year, he said, Van Atta did not abstain from voting on water issues affecting his firm's clients.

"Everybody seems to be afraid to blow the whistle, and I wish somebody would," Harrison said. "This is the trouble with Van Atta. He's representing the farmers, not the duck hunter. It's clients first, and ducks are somewhere down the totem pole."

Roy Leach, now employed by the Nevada State Fish and Game Department, worked for the Grasslands in the late 1970s and conducted a study of district water quality. Leach said he "documented" repeated violations of the Grasslands water quality standards.

He said that when he sought Environmental Protection Agency funds for a major study, the Grasslands legal counsel, attorney Roy Lower, told him to drop the effort — "There was no reason given."

"I was told by Roy Lower that that was it. If anybody from EPA showed up on any of my tours or I had more correspondence with them, I'd have stronger dealings with the board. In other words, I was history. At that point I was history anyway. So all I did was finish up the report [illegible] and I got my tail out of there and left the state."

Leach also said that many decisions on drainage were made in executive board meetings, "which there were never any minutes on."

Lower denied Leach was threatened with firing. He said he "can't recall" if he asked Leach to drop requests for EPA study funds.

But Harrison remembered Leach "was a conscientious guy, and he was finding out how bad the water was, and certain members of the board threatened him that if he made it public, they would fire him." The Grasslands replaced Leach as district water quality tester with Scott Lower, Roy Lower's son.

Van Atta and Lower contend that some of the irrigation districts have "historic drainage rights" regardless of water quality. But Lower conceded that he was unfamiliar with a passage of the 1969 state Porter-Cologne Act that says, "Discharges of waste into waters of the state are privileges, not rights."

Lower also said the district receives $5 an acre for farmlands drained, but Harrison contended that a lot of growers "are draining for free."

Grasslands manager Don Marchiori and Lower conceded that more than a year after the high levels of selenium at Kesterson were made public, the Grasslands district still is not conducting selenium tests. Van Atta said it is.

page 2 of 3

Claus, with a doctorate in urban planning, said the Fish and Wildlife Service and the Soil Conservation Service have encouraged duck clubs to use drain water by paying the clubs to take summer drain water to preserve marshland habitat.

"What they're doing is turning it into a gigantic sewer dump," he said.

In a detailed 100 page study, Claus contended that big West Side agribusiness interests, aware that completion of a master drainage canal is far in the future, accurately forecast that it would save them millions to dump their drain water in the Grasslands. The alternative, he said, would be to set aside valuable farmland for evaporation ponds.

Richard Myshak, regional director of the Fish and Wildlife Service in Portland, still defends the service's easement program to pay duck club owners to accept drain water to keep the marshes flooded, but he concedes that it is under review.

His aides confirmed that they relied on water quality data supplied by the Grasslands in setting up the program. Those tests for total dissolved solids, considered by water chemists to be an outdated method of measuring contaminants, do not detect trace minerals or pesticides.

Littlefield, retired manager of Kesterson, said he believes the government's inability to solve the pollution problem is among factors that could wipe out the valley's duck population within 25 years.

To the big West Side farmers, he says, "a duck is just a nuisance."

page 3 of 3

90

Last of five parts

'Paper farming' let growers skirt law

By GREGORY GORDON and LLOYD G. CARTER
United Press International

WASHINGTON — Ila Dicks says she was a paper farmer, holding title for seven years to California cropland to permit her brother-in-law to circumvent a federal water law and obtain government subsidies.

Dicks said her sister's husband, Frank Telles, manipulated her and her family into putting nearly 1,000 acres of his farmland in their names to evade federal restrictions on cheap, interest-free, government water for big farmers in arid regions.

"They just use people's names," Dicks said in a telephone interview from Hawaii, where she lives. "We never got anything out of it. They were the ones who were farming the land and making all the money, and we made nothing."

But her sister, Mona Telles, says the government approved all the land dealings that allowed her family, in effect, to far exceed the acreage limit set in a 1902 reclamation law.

Designed to encourage family farming, that statute limited growers in the sun-scorched West to federal water for 160 acres per family member.

Farmers were required to sell all excess acreage after 10 years, or pay full cost for the water — as much as tenfold the government's bargain price of $7.50 an acre foot, which is enough water to cover an acre a foot deep.

NOW 17 YEARS since the U.S. Bureau of Reclamation first brought water to the western San Joaquin Valley, the Telleses and 29 other corporate farmers control more than half the land in the bountiful 894-square-mile Westlands Water District.

Taxpayers have paid for tens of millions in water subsidies for these big growers, whose irrigation wastewaters are damaging the environment.

Their land, which comprises much of the nation's agricultural fruitbasket, has skyrocketed in value with its tremendous productivity, although their wastes streaming northward have polluted and depressed values for tens of thousands of acres owned by neighboring farmers and ranchers.

Critics say the corporate farmers' political clout is evidenced by the government's failure to enforce pollution laws regulating their waste water draining into a wildlife refuge and by the Interior Department's lax enforcement of the 160-acre limit.

Dicks said Telles and other farmers on the West Side have retained ownership while shuffling papers — putting land in the names of relatives, friends, farm foremen and other employees. In some instances, real estate sources said, trusts were established declaring fetuses as legal land owners.

DESPITE WIDESPREAD allegations of "paper farming" in the Westlands, Interior Department officials say numerous loopholes in the 1902 law and a 1982 revision allow the practices. Congress relaxed the law two years ago to increase the limit to 960 acres per family and to permit unlimited leasing.

But Vera Cooper, who retired last winter as the government's chief enforcer of the acreage limitation law, said farmers who concealed ownership in the past may have violated the law. He said the bureau never went on a "witchhunt" to find them.

Dicks sued last year to claim title to 160 acres after a bitter family feud. She said she never put up a dime for the land she held, never collected rent from the Telleses and never received any money on transfer of 160 acres back to Telles' 1-year-old granddaughter. She also acknowledged she never paid the taxes or upkeep for the property she was asked to hold in 1975.

In a court deposition in April, she said Telles provided her a rent-free condominium in the seaside resort of Carmel, Calif., a $1,000 monthly stipend and a free auto.

Page 1 of 4

DICKS ALLEGED in her suit that her signature was forged on grant deeds returning the quarter-section to Telles in 1982. She valued the 160 acres at several hundred thousand dollars.

This spring, Dicks withdrew the suit when handwriting experts concluded the signature was valid. She told UPI that Telles may have "slipped in a piece of paper" while she was signing other documents over the years.

"You know, he just said, 'Sign this, sign that. You don't need to read anything,'" she said. "So I mean, I really don't know what I signed."

She said her parents, her older sister and her sons also became owners of 160-acre parcels.

Dicks said when she told Telles in 1982 that she felt she was the rightful owner of her 160-acre tract, Telles said, "You're never going to end up with this land ... I'll go to prison first."

Telles declined comment, but his wife, Mona, said she asked her parents and sister to hold the land "because we needed names because we had so much land."

"We were all waiting for the law to change" to an expanded acreage limit, she said. "Are we going to be forced to sell it, or what are we going to do, you know?"

MONA TELLES said bureau officials responsible for ensuring compliance with the limits "approved" the land transfers.

"I mean, you know, you don't do this without being approved," she said.

She dismissed her sister's complaints, saying she is "jealous" of her luxurious lifestyle.

"There was no money (that) ever came out of her pocket, no money ever went into her pocket," she said. "It was just an agreement."

Landowners in the cucumber-shaped district about the size of Rhode Island have had good reason to cling to their property.

The arrival of federal water via the 1960 San Luis water project converted much of the land to cotton country averaging three bales an acre. Land records show that values jumped from $100 an acre to $3,000 an acre, and in some instances to more than $5,000 an acre.

Page 2 of 4

Landowners forced to sell excess property have been limited by federal contracts to prices in the range of $600 an acre, but only for the first sale.

Besides being legitimate sidesteps from the 160-acre restriction, many of the insider land dealings permit resales that circumvent the price ceiling, valley real estate agents said.

JAMES GANULIN, an attorney for the water district in Fresno, said "there has been compliance" with the acreage limit.

"People have done their darndest to try and live up to the law," he said. "I do not think the allegations are correct."

Ganulin, paid by the growers, acknowledged the district's enforcement staff has no subpoena power nor other authority to investigate abuses.

Ganulin, who said he was unaware of Dicks' allegations, said it would be a violation of the reclamation law if an owner of 160 acres had unrecorded title to other property and failed to report it on a sworn statement filed with his government water contract.

Dicks said no federal agency has contacted her about her land dealings.

She said she saw documents showing Telles "must use 100 different people's names" as temporary title holders.

"It was like paper farming. They want all the money to themselves and you get nothing ... They just use you, that's all."

Dicks' lawyer, Mary Louise Frampton of Fresno, said the Telleses even took out a multimillion-dollar loan on the property from Travelers Insurance Co., with Dicks and her parents co-signing.

"DICK TELLES would send her the check for the mortgage payment, and then she sent a new check to Travelers," said Frampton, who also represented National Land for People, a land reform group.

Dicks' parents, Ray and Leona Buie, declined comment on her contention they also held land for Telles.

Because of the Interior Department's failure to police the 160-acre limit, the National Land for People sued, and in 1976, won a court moratorium on land sales pending implementation of federal regulations to enforce the acreage rule. The moratorium was not lifted until this year, in effect giving growers an extra eight years of cheap water.

Required sales have yet to resume, however, because the Interior Department still is developing new guidelines.

91

DLN:
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Growers also exploited other loopholes in the reclamation law. In the 1960s, the Interior Department chose not to enforce a requirement that farmers live on or near federally irrigated land. After the residency requirement was upheld by Solicitor Leo Krulitz in 1974, the department chose to apply his ruling only to future sales, allowing scores of farmers to escape penalties.

Through it all, there has been little movement toward breaking up the holdings of the big land barons.

When the court moratorium was imposed, it froze the holdings of the biggest Westlands Water District landowners: Southern Pacific Railroad with 106,427 acres; J.G. Boswell Co.'s Boston Ranch with 26,485 acres; Harris Farms, operators of the world's largest feed lot with 18,393 acres, and Standard Oil Co. with 10,474 acres.

Cooper acknowledged that the bureau "has never had the resources available to it and has never put forth a large number of people in the field to administer" the 160-acre limit.

In 1982, Congress revised the law, under pressure from the agriculture lobby, raising the acreage limitation to 960 acres per family. It eliminated the residency requirement, and by allowing unlimited leasing made it clear that big agribusiness was in the valley to stay.

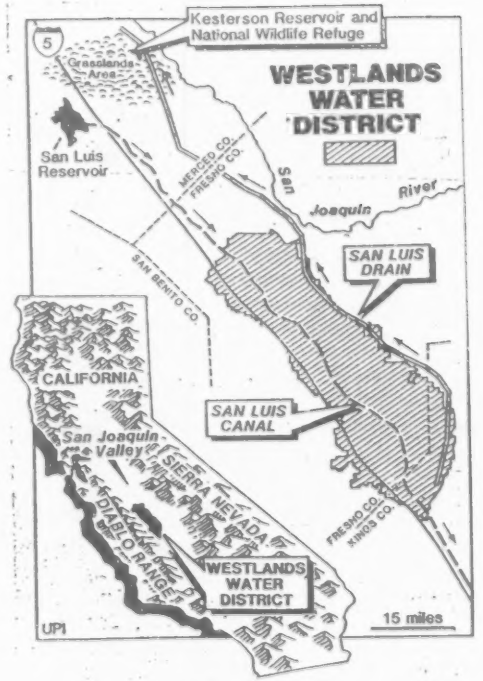
While the legislation affects reclamation projects in 17 states, it was targeted to the Westlands, where there are only 236 farm operators.

"Congress solved it by legalizing all the crimes," said George Ballis, who formed National Land for People. He said the new law, with unrestricted leasing, means "there's no limitation" on acreage anymore.

"Leasing might have created more problems than it solved," Cooper said.

"Young people can't get into farming. A lot of people who took advantage of the leasing provision got more benefits than Congress originally intended."

Page 3 of 4



Page 4 of 4

59-098 O-86-4

United States Department of the Interior

BUREAU OF RECLAMATION
Upper Missouri Region
P.O. Box 2553
Billings, Montana 59103

IN REPLY
REFER TO: UM-780
563.

MAY 31 1985

U.S. FISH AND WILDLIFE SERVICE
RECEIVED
JUN 03 1985
SD (ES)
FIELD OFFICE

Memorandum

To: Field Supervisor, Fish and Wildlife Service, Pierre, South Dakota

From: Regional Planning Officer, Billings, Montana

Subject: Review Comments on CENDAK Fish and Wildlife Coordination Act Report of April 12, 1985

We have reviewed the subject document and have the following comments:

Page 4, Second Paragraph

Oahe and Lake Oahe Pumping plants would have capacities of 4,100 ft^3/s, and 2,400 ft^3/s at normal lake elevation. The capacities that are cited in the Coordination Act Report are at minimum pool elevation.

Page 6, Second Paragraph, Line 5

Delete the word "perched."

Pages 3 and 7

General comment.--The size of the project area needs to be consistently defined. Page 3 states it is approximately "120 miles long and 65 miles wide." This equates to 7,800 square miles or 4,992,000 acres. Page 7 states ". . .the project area encompasses approximately 5,100 square miles" which equates to 3,264,000 acres. These do not correlate with the service area descriptions, e.g., 390,000 acres or about 15 percent of the project area" (page 12). Converting the latter description gives a project area of 2,600,000 acres which is approximately the same as the project area size presented in our report (2,500,000 acres, page 3-2). The differences in the latter figures are probably due to rounding.

Page 21, General (Descriptions of Service Areas)

"Substantial fishery resource" and other similar terms need to be defined.

Page 30, Second Paragraph

Sample Data.--The use of both signup and nonsignup data to derive baseline habitat coverages is a different method than was used in the "Interim Fish and Wildlife Coordination Act Report" and the supplement thereto. These projections give a clear definition of future grassland values in the project area without irrigation development. These values were incorporated in all analyses of future conditions with and without irrigation development.

Future Without The Project Conditions, Second Paragraph.--With the numbers of actual and potential projects along the James River, e.g., South Dakota dredging program; South Dakota Water Delivery Study; Garrison Diversion Unit; etc., it does not seem reasonable to expect conditions will remain the same.

Future With Project Conditions.--Although it was previously stated, it might be well to reiterate that your analysis is based on full quarter sections rather than net irrigated acreage on irrigable lands.

Page 42, First Paragraph, First Sentence

Change to read ". . .natural channels, where possible, or would be modified as necessary to permit them to serve as outlets for all the surface and subsurface water from the project area." Also channel modifications would be only for the tributaries to the named tributaries. Comment also applies to page 56.

Page 43, First Paragraph

CENDAK Fish and Wildlife Coordination Act Report.--Statement about Bureau soil sampling in the project area is basically correct but only for the 10 percent hydrochloric acid extraction procedure where the objective was to simulate an extremely severe condition to strip any available element from the soil.

A one-part soil, one-part water extraction procedure was used to determine the concentrations of water soluble elements that would become environmentally available with irrigation. Levels of arsenic, iron, lead, manganese, mercury and cadmium that exceeded aquatic wildlife, livestock and/or domestic health/welfare standard are displayed in the enclosed table.

We have no indication from our soil analysis that the project area is a source of selenium. Under present or irrigated condition, how will concentrations of selenium increase in the river ecosystem by irrigation return waters where our analysis reveals there is no selenium present in the soil? If selenium is not present in the soil, how is the element dissolved and transported to Stratford Slough? The selenium intake in the Slough possibly could have come from drainage of selenium-rich areas north of CENDAK.

Page 44, Last Sentence

Delete.

Selenium

The Sacramento Bee Volume 258 Sunday, September 8, 1985

The Bee uncovers a conspiracy of silence on selenium

Toxic chemical threatens West

Massive projects for water blamed

By Tom Harris and Jim Morris
Bee Staff Writers

Bee/Michael Watamori

Wildlife managers throughout the West, like Gene Sipe of the Bowdoin refuge in Montana, fear selenium is turning their sanctuaries into "death traps."

Sac Bee 9/8/85

Massive projects for water blamed

By Tom Harris
and Jim Morris
Bee Staff Writers

First of three parts

Selenium, the lethal natural poison that has killed and deformed birds, fish and other wildlife in the San Joaquin Valley, is poisoning wildlife, livestock and even some rural families over thousands of square miles in 15 Western states, a Bee investigation has disclosed.

At fault, in most cases, are massive federal water projects.

Built to make the parched West bloom through intensive irrigation, scores of these projects are robbing waterfowl and wildlife habitat of limited fresh water and returning it laced with selenium — and other toxicants — to taint wildlife refuge areas, lakes, rivers and reservoirs used for drinking water, irrigation or recreation.

The Bee probe, backed by independent laboratory testing, has found alarmingly high levels of selenium on or near almost every federal water project it checked throughout the West.

The widespread poisoning is similar to that which is forcing the federal government to close the Kesterson National Wildlife Refuge in the San Joaquin Valley after it suffered the most severe outbreak of bird deformities ever recorded in the wild.

Other key findings of the four-month Bee investigation:

• The federal Bureau of Reclamation, whose empire of water projects is the suspected cause of the contamination, is trying to cover up the scope of the problem by stalling a plan to search for selenium and other toxic trace elements, like arsenic, in drain waters from as many as 470 of its projects.

• Warnings about the dangers of selenium — contained in volumes of historical reports, some nearly a century old — were ignored or overlooked by those who sponsored or built the massive water-diversion works in areas where selenium was known to exist.

• No government agency is testing food raised in high-selenium areas and some doctors warn that farm and ranch families in these areas — and perhaps others in nearby cities that rely heavily on locally produced grain, meat, milk and other foods — may be in danger.

• Selenium contamination also has spread much farther than imagined in California, contaminating water as far north as Stony Creek in the Sacramento Valley and as far south as the Salton Sea and the Imperial Valley.

• Wildlife refuge managers throughout the West, fearing their once raucous and healthy sanctuaries are being turned into silent "death traps," are reporting rapid declines in bird and fish populations and serious loss of nesting and feeding vegetation.

"Being at the garbage end of this thing is terrible," said Ray Rauch, manager of a national wildlife refuge along the Gulf Coast in Texas.

A plan for a massive and detailed search for selenium, recommended by government scientists, has been stalled for nearly five months in the office of Robert Broadbent, a former commissioner of the Bureau of Reclamation and now assistant secretary for water and science in the Interior Department.

Instead, the reclamation agency's regional offices have conducted a "broad reconnaissance" that found only "minor problems" and "no direct evidence of wildlife impact."

In sharp contrast, The Bee randomly sampled project areas in the West and discovered a widespread pattern of selenium contamination.

Samples analyzed by an independent laboratory found dangerous levels of the deadly soil element being flushed from drains in project service areas into or near waterfowl refuges in seven states: California, Idaho, Montana, South Dakota, Utah, New Mexico and Arizona.

Evidence of similar contamination and damage in eight other states was found through a combination of testing, reviewing government documents and interviewing dozens of ranch and farm families, federal and state biologists and geologists, physicians and pathologists.

Those states are Nevada, Texas, Wyoming, Colorado, Nebraska, Kansas, Washington, Oregon.

Evidence of contamination and damage also was found in two prairie provinces of Canada: Alberta and Saskatchewan.

The Bee collected samples from nine states and had them tested by California Analytical Laboratories Inc. of West Sacramento. The independent lab is certified to do such work by the U.S. Environmental Protection Agency.

The tests showed that 14 samples from refuges and farm drains in seven states were high enough in selenium to trigger death and deformity in migratory waterfowl, shore birds, fish, frogs, insects and other marsh-related wildlife.

Although scientists still are trying to establish a threshold level at which selenium damage begins to occur, a new study by the U.S. Fish and Wildlife Service at the Oahe Reservoir in South Dakota found that 564 parts of selenium per billion parts of sediment can trigger damage in fish and birds.

By comparison, Bee samples averaged nearly three times that level in sediments — 1,634 ppb — more than enough to build up to lethal levels through the aquatic food chain.

The selenium danger level varies from soil to water to wildlife.

Sites where The Bee discovered concentrations in the danger range, above 600 ppb and ranging up to 7,500 ppb, include:

• The Salton Sea National Wildlife Refuge in Southern California.

• The Imperial National Wildlife Refuge, on the Arizona side of the Colorado River.

• The Bosque del Apache National Wildlife Refuge in New Mexico.

• The Desert Lake and Stewart Lake waterfowl management areas in Utah. A catfish from Stewart Lake had 12,768 ppb of selenium, far above the level needed to cause reproductive damage and low survival of young.

• The Bowdoin, Benton Lake and Freezeout Lake national wildlife refuges in Montana.

• The Deer Flat National Wildlife Refuge in Idaho.

• The Belle Fourche and Cheyenne rivers, upstream of the Oahe Reservoir in South Dakota.

Selenium once was believed limited to localized "hot spots" in a few northern states. But a 1941 report by the federal Department of Agriculture obtained

CONT

by The Bee states that selenium at levels high enough to make vegetation toxic to animals exists over "thousands of square miles" of Western land.

Bee findings tend to confirm that.

In addition to the higher, dangerous levels found elsewhere, The Bee found concentrations approaching the danger point — from 200 to under 600 ppb — in the Rio Grande and Laguna Atascosa national refuges near the Gulf Coast in Texas; in the Imperial Valley and near a drain leading to the Salton Sea in Southern California; in seepage running into the Green River near Vernal and in Desert Lake, in southeast Utah; in the Stillwater National Wildlife Refuge near Fallon, Nev.; and near the Bosque del Apache refuge in New Mexico.

Less hazardous, but elevated, levels — between 100-200 ppb — were discovered in Yuma Valley, Ariz., again at Stewart Lake in Utah and in a bird egg from Lassen County in northeastern California, near Termo.

Those discoveries come in the wake of an alarming decline in waterfowl and other wildlife populations on national and state refuges throughout the West.

The Fish and Wildlife Service's annual migratory bird census this year is the lowest it has been in the 30 years the counts have been made.

The number of ducks on the Pacific Flyway, generally from the Pacific Coast to the western flank of the Rocky Mountains, has declined 20 percent from last year — down about 3 million, according to federal records.

In the Central Flyway, which covers the rest of the West to the Mississippi River, the decrease is much steeper. Last year there were 26.3 million ducks. This year, experts estimate there are only 18.5 million, a 30 percent loss.

Biologists say that the biggest single factor in those losses is the destruction of wetland habitat where the birds breed and nest. To make matters worse, what little habitat is left — as farmers turn increasingly more wetlands under the plow to offset declining profits — is being tainted by increasingly saline water and lethal contaminants.

Indeed, more than selenium is involved in the death threats now emerging at marshes, wetlands, refuges and other waterways throughout the arid West.

Although Bee sampling analyzed only selenium, federal studies have turned up dangerous levels of arsenic in refuges in Texas and Nevada. Toxic amounts of heavy metals, such as mercury, cadmium, chromium and others, are being studied at scores of refuges throughout the nation.

Numerous dissolved salts and minerals in irrigation return flows are seriously degrading waterfowl habitat throughout arid regions served by the federal water projects.

Cropping and cultivation practices compound the problem.

Millions of acres of native grassland that once held the water in place have been broken for cultivation, increasing tainted runoff and seepage. That drainage has been increased greatly by irrigation that flushes salts and toxicants from the ground that otherwise would remain in place or be leached out slowly, and harmlessly, over hundreds or thousands of years.

The extent of that problem is detailed in one of the many important government studies left to gather dust on a library shelf. The report, by the state of Montana, identifies more than 2 million acres of farmland from which saline seepage high in both selenium and arsenic is endangering livestock, driving farmland out of production and poisoning ponds, reservoirs and streams.

Nowhere is that more evident than around the Benton Lake, Bowdoin and Freezeout Lake national wildlife refuges in northern Montana, and many other smaller satellite ponds and marshes nearby, where the seeps proliferate.

Benton Lake refuge, 12 miles northwest of Great Falls, is a prime example. It gets some of its water directly from such seepage and also draws water from Muddy Creek, into which drainage from farms served by the federal Sun River Project flows.

A mud sample from a pond there had the highest level of selenium recorded in The Bee sampling, 7,500 ppb. That is higher than some Kesterson sediment levels.

That came as a shock to refuge personnel, who didn't know that that much of their water supply was from farm drainage nor that it was laced with selenium.

"There is no agricultural waste water used in the refuge," said assistant refuge manager Tom Tornow, "although we do get some seepage from right here in the basin.

"I've read about Kesterson but I don't think the subject has ever come up here. I don't think we've ever tested for selenium here," said Tornow.

Although Tornow says the refuge has a "high nesting success ratio consistently," the current estimate is for a crop of only 12,000 young, half the number normally produced. Most of that has to do with low water supply, a time when selenium is concentrated to much higher levels.

Freezeout Lake, about 20 miles west, is a former national refuge now managed by the state of Montana. Bird production is down there, too, but no effort has been made to test for causes, even though several state agencies know selenium is the cause of cattle and fish kills in the area.

In fact, no testing to discover the kind of death and deformity of waterfowl that occurred at Kesterson has been done anywhere else in the nation.

Samples from drainage ditches feeding into Freezeout Lake exceeded 1,400 ppb, nearly three times the level needed to harm fish and waterfowl, and a selenium-accumulating weed called an Astragalus contained 74,760 ppb, enough to be highly toxic to cattle.

The picture at the Bowdoin refuge, fed by drainage from the federal Milk River Project, in the northeast corner of the state, is more dismal.

Starved for fresh water to stave off the steady intrusion of salt that is killing off the needed nesting and feeding vegetation, refuge mud showed 3,136 ppb of selenium.

Other samples showed selenium in the water itself at levels at which fish begin to suffer or die.

Once the scene of a thriving commercial carp fishery, the refuge no longer supports fish life of any kind. "It's too salty now," said refuge manager Gene Sipe.

Similar conditions and findings are the rule, rather than the exception, in parts of Nevada, Texas and New Mexico, too.

Rauch, the manager of the 45,000-acre Laguna Atascosa ("muddy lake") National Wildlife Refuge in south Texas, wonders where all the redhead ducks have gone.

(CONT)

SAC. Bee
9-8-85

In winters past, they have congregated en masse at the laguna itself, but "they just aren't using it very much anymore," Rauch said.

For that reason, and because the refuge essentially is a "closed" system receiving lots of agricultural drain water, Randy Moss, a biologist from Oklahoma State University, is in the second year of a three-year pesticide and heavy-metals study there.

Moss has been collecting water, sediment, plants, fish and birds. They are being tested for selenium, copper, lead, arsenic, zinc and cadmium.

Sampling of sediment and algae by The Bee indicated selenium levels on and around the refuge of from 215 ppb to 224 ppb. That is about half the sediment concentration found to trigger damage in fish and wildlife in the South Dakota study, but elevated enough to cause long-term accumulation to danger levels.

One of the reasons Rauch isn't seeing so many redhead ducks at Atascosa anymore is that fewer of them are being hatched at places like Stillwater refuge in Nevada, and others like them near Vernal and Price, Utah.

Once considered one of the most prolific producers of redheads on the Pacific Flyway, Stillwater now is turning into a bitter saline sink on the Nevada desert. The state's biggest wetland, Stillwater once produced an average of 30,000 birds a year, the majority of them redheads.

By 1983, that figure was less than 10,000. Elevated levels of selenium were found there by The Bee.

High arsenic levels, too, have been found there, high enough, according to Fish and Wildlife sources, to cause serious bird losses.

Stillwater also has a long reputation for major outbreaks of botulism, an avian killer-disease that researchers now believe may be directly or indirectly related to elevated selenium levels.

Similar problems seem likely at the Bosque del Apache National Wildlife Refuge in central New Mexico. About 80 percent of its water is from agricultural drainage where selenium is known to be in both source rock and the soil.

The Bee's sediment and algae samples there, and about 15 miles north of the refuge, showed selenium from 308 ppb to 420 ppb, within the range where they contribute to dangerous food-chain accumulation.

Brent Giezentanner, assistant refuge supervisor for the Fish and Wildlife Service regional office in Albuquerque, said Bosque loses "200 to 500 birds a year to disease; they've lost as many as 2,000 in one year."

Bosque del Apache covers 52,000 acres. Like most of the refuges in the Southwest, it is a wintering ground for species such as Canada geese and mallard ducks. The resident population includes sandhill and whooping cranes, as well as wild turkey and quail.

There is no consensus on the subject of selenium toxicity in New Mexico.

MONDAY: Poisoning spreads to livestock.

(3)

Bee/Michael Williamson

Scores of dead or dying birds, including this stunted screech owl, have led animal activists to suspect toxic poisoning in the intensely agricultural Rio Grande Valley of Texas.

How The Bee found out

Bee reporters Tom Harris and Jim Morris traveled thousands of miles through 12 states tracking down rumors and reports of widespread selenium contamination in the West.

Even before they began searching, they consulted government and private geologists, biologists and chemists to find out when, where and how to collect samples of water, sediment, algae and fish.

Scientific methods were established to guarantee the accuracy of both the sampling and complicated chemical analysis. Private laboratory results were cross-checked by established experts.

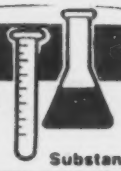
To further check the results, two different analysis methods were used, one certified by the U.S. Geological Survey and another by the Environmental Protection Agency. Results were comparable, within an acceptable scientific range.

Harris and Morris conducted scores of interviews with doctors, pathologists, veterinarians, botanists, ranchers and farmers, refuge managers, wildlife biologists and others.

The result of their investigation — the first of its kind in the nation — provides evidence presented in this three-part series of a widespread, and growing, selenium threat.

SAC BEE 9/8/85

Selenium levels



Selenium levels in areas of concentration

Place	Selenium Levels* (parts per billion)	Substance
Fallon, NV	< 100	algae
[redacted]	18	algae
Fallon, NV	60	algae
Desert Lake, UT	< 35	soil
Desert Lake, UT	218	mud
Desert Lake, UT	< 35	water
Vernal, UT	280	mud
Vernal, UT	< 35	mud
Stewart Lake, UT	140	algae
Stewart Lake, UT	7,114	fish
Angostura, SD	2,128	algae/mud
Angostura, SD	915	algae
Belle Fourche, SD	6,832	mud
Edgemont, MT	252,000	plant
Bowdoin NWR, MT	3,136	mud
Bowdoin NWR, MT	< 100	mud
Huntley, MT	< 100	mud
Benton Lake NWR, MT	7,500	mud
Fairfield Bench, MT	1,400	mud
Fairfield Bench, MT	74,760	plant
Freezeout Lake NWR, MT	1,578	mud
Deer Flat NWR, ID	812	mud
Bosque NWR, NM	420	mud
Bosque NWR, NM	< 35	algae
Rio Grande, NM	308	algae
Poison Canyon, NM	1,550	mud
Salton Sea NWR, CA	1,360	algae
Salton Sea NWR, CA	216	algae
Salton Sea drain, CA	2,240	mud
Salton Sea sump, CA	1,764	mud
Yuma Valley, AZ	133	algae
Yuma Valley, AZ	2,016	mud
Imperial Valley, CA	420	mud
Laguna NWR, TX	< 35	algae
Laguna drain, TX	224	mud
Cayo Atascosa, TX	215	algae
Rio Grande NWR, TX	392	mud
Rio Grande NWR, TX	140	algae
Termo, CA	119	plant
Termo, CA	114	egg
Avg. of 20 samples	1,634	mud
Avg. of 14 samples	466	algae

Selenium levels in sediment known to cause damage (Oahe Reservoir, SD) 200 to 3,700 ppb (average 564 ppb)
Levels in fish in Oahe Reservoir 330-1900 ppb (avg. 1054 ppb).
Levels in water and shorebirds in Oahe Reservoir 1300-21,000 ppb
EPA limit for protection of freshwater environment, 35 ppb
Levels at which biological impact appears in fish, 2-5 ppb

*Levels reported by California Analytical Laboratories, Inc. of West Sacramento as wet weight, later adjusted for dry weight concentration and for average 60 percent recovery of actual selenium present

NWR = National Wildlife Refuge

< = less than

Source: Bee investigation

Bee graphic, Paul Dugmski

Selenium: Conspiracy of Silence

Bee/Michael Milliman

The Kesterson National Wildlife Refuge. Its name has become synonymous with massive selenium poisoning of wildlife. The federal government has ordered its closure. Caretakers Rebecca Ward, left, and Mary Coakley patrol the refuge with shotguns. But their aim is not to kill but rather to save — by rousting birds from poisoned water.

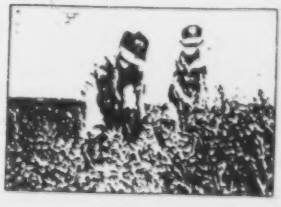
Selenium: Conspiracy of Silence

The Sacramento Bee - Sunday, September 8, 1985 A17

Bee Michael Williamson

Cattle bones in South Dakota are relics of the lethal and little-understood selenium, which can also poison humans through the food chain

According to federal reports dating back to 1941, selenium at levels high enough to make vegetation toxic to animals exists over thousands of square miles of Western land



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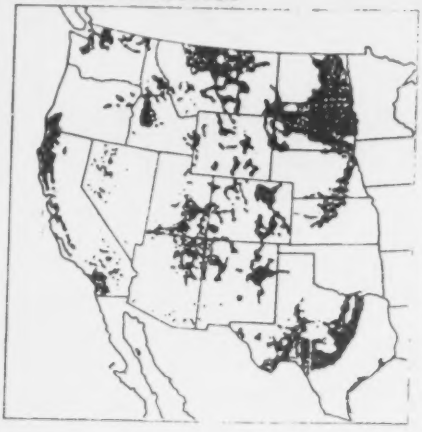
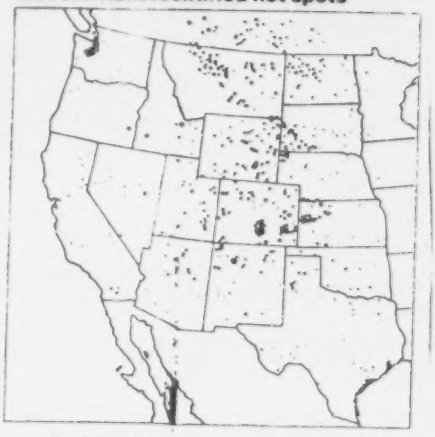
Selenium hot spots

Selenium source rock



Government identified hot spots

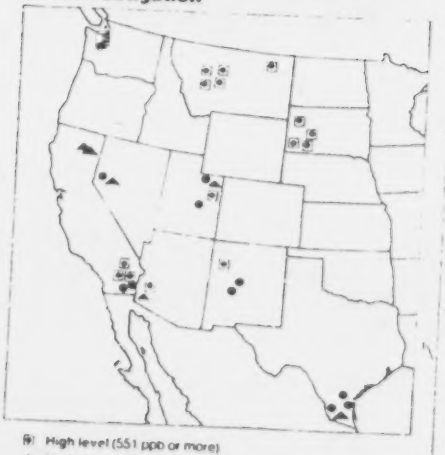


- Soil (750 ppb or more)
- Vegetation (500 ppm or more)

ppb = parts per billion
ppm = parts per million

Source: Federal and state reports, then investigation

Bee investigation



- High level (551 ppb or more)
- Moderate level (200-550 ppb)
- Low level (50-199 ppb)

Bee graphic: Paul Chapman

A16 The Sacramento Bee • Sunday, September 8, 1985

Selenium: Conspiracy of Silence

Potential for peril lurks throughout state

By Tom Harris
and Jim Morris
Bee Staff Writers

Selenium, a geological oddity once believed confined to a small corner of Merced County, now has been confirmed from almost one end of the state to the other in water, fish, birds, other wildlife and a variety of plants and insects.

A small army of state and federal scientists and others have found elevated levels of the toxic trace element leaching from mine tailings and geological formations, and in discharges from farms, sewer plants, oil refineries and chemical plants.

The place names for the discoveries stand out like a road map of the nation's longest state: Stony Creek, Glenn County; Termo, Lassen County; San Francisco Bay; San Joaquin River; the western flank of the San Joaquin Valley from Merced to below Bakersfield; Santa Monica; the Imperial Valley, and the Salton Sea.

So far, biological damage has been proven only in the Kesterson National Wildlife Refuge and the adjacent Grasslands area of Merced County. However, no precise sampling or analyses have been done to confirm whether wildlife death or deformity is occurring at other places where selenium has been detected.

Wildlife experts warn that at many of the discovery sites, the levels of selenium are high enough to cause similar problems for aquatic insects, fish, waterfowl and other wildlife.

South of Kesterson, the state Water Resources Control Board found selenium levels in fish in the Salton Sea and the Colorado River at 3.1 parts per million, well above levels known to cause severe reproductive failure.

And, as part of its own Western selenium search, The Bee confirmed a buildup of selenium in the sediment of farm drainage ditches leading to the Salton Sea National Wildlife Refuge, in the refuge itself and in silt from the Colorado River.

Levels in mud ranged from 1,760 to 2,240 ppb, and in algae from 216 to 1,360 ppb. Both are potentially dangerous: 1000 ppb, or 1 ppm, is considered hazardous waste under federal law.

Gary Kramer, manager of the Salton Sea refuge in California, believes — hopes, anyway — that if the Salton Sea had been destined for an environmental cataclysm on the order of Kesterson, it would have happened already.

"This is an old (irrigation) system," Kramer said, noting that the Imperial Valley has been heavily farmed since the early 1940s. "I would think that by now, with that much more leaching (of drain water), you'd have already seen something."

One possible explanation, he said, is "the place they had to put" the waste — the massive Salton Sea, which is 36 miles long and 14 miles wide.

"We're not talking about dumping into a little pool," said Kramer, who had been a biologist a Kesterson for 3½ years.

Still, he is taking no chances. Studies of waterfowl in the Salton Sea refuge "have not been that extensive," he said, so he and his biologists are watching closely for deformities or deaths.

They recently collected 15 of each of the four predominant species of fish — corvina, tilapia, sargo and croaker — and two dozen

(1) CONT

Selenium in California

Bee graphic

SAC BEE
9-8-85

heron and egret eggs for analysis at a Fish and Wildlife Service laboratory. The state water quality board collected 28 fish for its own study.

It is Kramer's feeling that the lake's major problems are sewage (from nearby Mexico) and pesticides, not selenium from agricultural runoff.

An unpublished state report, however, suggested selenium was accumulating at levels of concern in fish. The flesh of a corvina caught last year in the Salton Sea and the liver of a catfish caught in the Colorado River, which feeds into the sea, both had selenium readings of 3.1 ppm.

That's about 100 times higher than levels at which federal reports show most fish begin to suffer serious reproductive losses. Officials are further concerned because many of the birds at the refuge feed on fish and could rapidly accumulate lethal doses.

"That's not surprising, really," Kramer said of the high levels found by The Bee in both algae and mud. "I suppose that's one of the reasons we're taking samples. We want to see if we have a mini-Kesterson or an even larger problem."

The refuge, which encompasses about 35,000 acres, was created in 1932. At the time, about half of it was under water, but the sea has risen so much since that only about 2,000 acres of dry land remains.

It is primarily a wintering ground for birds such as Canada geese, snow geese and pintail ducks; its year-round population — great blue herons, common egrets — is relatively small, making it difficult to pinpoint chronic effects of contaminants.

"There's a lot of nasty stuff coming into the Salton Sea — there's no question about that," Kramer said. "I think we need to start looking at it a lot closer. I was there (at Kesterson) when it started, so I believe I have as much sensitivity to the problem as anyone."

Other potentially dangerous concentrations of selenium have been reported by the Central Valley Regional Water Quality Control Board and the state Department of Water Resources in the San Joaquin River and its tributaries.

Those concentrations are a threat to both fish and the aquatic life forms upon which they feed and, unless diluted by Sacramento River flows, to drinking water pumped into the California Aqueduct farther downstream.

In the Sacramento Valley, levels both above and below Black Butte Reservoir on Stony Creek are below the danger point and apparently the result of selenium being leached from natural source-rock formations on the west side of the valley.

The element also may be leaching from copper-mine tailings — copper is one of the main sources of selenium — into Keswick Reservoir west of Redding. From there it could move into the Sacramento River, which supplies drinking water to cities up and down the state.

The state's water delivery agency — the Water Resources Department — has found 14 farm drainage sumps, ditches, ponds or canals in the San Joaquin Valley and Tulare Lake Basin, both north and south of Bakersfield, with selenium levels as high, or higher, than in Kesterson water.

All 14 readings are far above the limit of 35 parts per billion that the federal Environmental Protection Agency says can result in damage to freshwater life forms.

Selenium is dangerous at much lower concentrations in water.

At 13 other reporting stations, including several in the San Joaquin River and its tributaries, the state agency has recorded levels consistently above 2 to 5 ppb — the level the state Department of Fish and Game now believes hazardous to most fish life.

At two of those stations, levels also exceed the safe level for drinking water of 10 ppb.

At the south end of the San Francisco Bay, the U.S. Fish and Wildlife Service has checked the livers of ducks and detected almost as much selenium in them as in waterfowl from Kesterson and the Grasslands, where both death and deformities have occurred.

Federal biologists are trying to find out whether the source is industrial sewage from the Silicon Valley, where selenium is used in a wide range of electronic applications, or long-term buildup from the San Joaquin River.

Two environmental groups, Citizens For A Better Environment and the Bay Institute of San Francisco, working with data from the water quality board and others, discovered that industrial discharges from just six oil refineries accounted for 2,479 pounds of selenium every year in the bay system.

And an unknown amount flows into the bay from a variety of other industrial dischargers, including printing, painting, dye and glass operations.

The damage isn't limited to waterfowl.

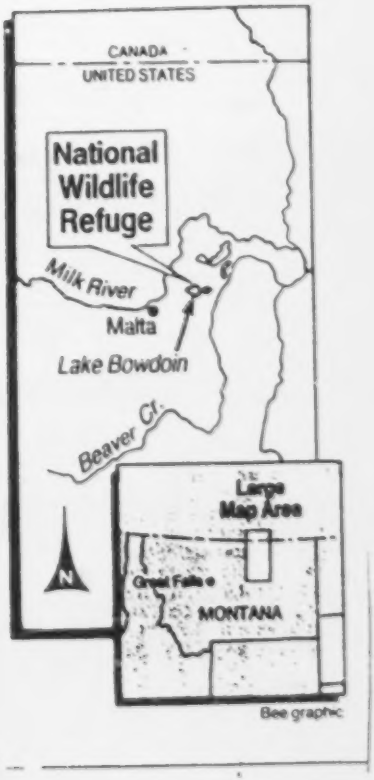
Dungeness crabs near Redwood City and clams near refinery discharges have been found to contain selenium well above levels known to cause low survival in most aquatic species. They discovered selenium levels up to 9.8 parts per million in the crabs and 7.4 ppm in clams.

The U.S. Geological Survey last month reported elevated selenium levels in its sampling of the sprawling, 75,000-acre Grasslands, a marshy area in northern Merced County. Although the levels were nearly 10 times lower than those found in the flow from the San Luis Drain into the Kesterson refuge, they were still above the EPA's standards.

The levels recorded by the Department of Water Resources in the San Joaquin River and its tributaries appear high enough to damage a wide range of fish and other aquatic species, but there has been no extensive monitoring to prove the damage.

SAC Bee 9-8-85

Refuge provides home for looming disaster



By Tom Harris
Bee Staff Writer

MALTA, Mont. — Dust devils whirling near the south end sucked up towering columns of chalky-white dust.

The shoreline had a telltale bathtub ring of salt crust around the edge.

Thick clouds of brine flies hovered on or above the stagnant water.

This wasn't Mono Lake of the high, dry desert in the Sierra Nevada but rather Bowdoin National Wildlife Refuge, on a pre-glacial oxbow of the Missouri River, in northeastern Montana.

It is a refuge in trouble.

Persistent drought is shrinking the lake and turning it increasingly saline.

Now, an even greater threat — selenium — has been recorded there by The Bee at levels many times higher than those known to be dangerous to fish and waterfowl and other aquatic plants and organisms upon which they feed. Indeed, there are no fish left in the lake and ducks and geese are refusing to nest.

The selenium, along with an assortment of pesticides and nutrients, is being leached out of the surrounding farmland of the Milk River Valley and dumped into the lake. The secondhand irrigation water from the federal Bureau of Reclamation's Milk River Project accounts for more than half of the lake's meager water supply.

One sample of mud from the bottom of the troubled and shallow lake had 3,136 parts per billion of selenium. That is more

SJC Oct 4 & 5

than six times higher than levels known to contribute to selenium poisoning of fish, waterfowl and other wildlife.

As a solid matter, that sediment is sufficiently toxic to be considered an official hazardous waste under federal rules.

The selenium presence wasn't a great surprise to refuge manager Gene Sipe. He suspected selenium after reading about the problems at Kesterson, where he once served, and observing evidence of the potent trace element at Bowdoin.

"Frankly, since I spent some time there (Kesterson), I have read everything about the issue I could get my hands on. I was worried that our problems here might, in some way, be related," Sipe said.

"I've seen the indicator plants (the Astragalus plants that accumulate high levels of selenium) on the refuge here, so I know we have it. I scrounged up some funds to have a biology professor from Northern Montana College (at nearby Havre) look for it."

The professor, Everett Pitt, found it, but because his analytical methods were not as sensitive as those required by the U.S. Geological Survey, the results were inconclusive. They showed selenium in the refuge water averaged 60 ppb, well over the stress limit for a number of organisms, including the Environmental Protection Agency's 35 ppb for protection of freshwater organisms.

Sipe said he will try to get more sampling and analysis, using the more precise Geological Survey method.

"This used to be a real nasty sinkhole," said Sipe during a tour of the refuge, recalling years of massive waterfowl losses due to what then was diagnosed as avian botulism.

A common problem in lakes with too little fresh water, botulism has more recently been linked to selenium.

Biologists now suspect selenium either could have caused the loss directly and been misdiagnosed, as happened at Kesterson initially, or made the birds more susceptible by weakening their immune systems.

"It got quite a bit better here for a while," said Sipe, "but things started turning sour again four or five years ago.

"There's no nesting to speak of going on this year," Sipe said. "The birds are just hanging out. They seem to sense when conditions are bad."

By early June, the refuge should have been dotted with goslings and ducklings. Few could be found.

A "mating pairs" survey — counting the number of birds paired off and preparing for serious nesting — found just a few dozen when it should have found hundreds.

"We have good nesting success here, as a rule," Sipe said. "But the past few years we just are not seeing the offspring from the ducks, geese and pelicans at the later brood stages that we should. Somehow, we are losing them before they get that far."

What is happening to geese at Bowdoin is a case in point.

"One of Bowdoin's key roles is in building — the so-called "Highline Flight" of Canada geese that nest and reside in northern Montana rather than the far Canadian north.

The resident nesting population at Bowdoin has peaked at 2000. Normally, the geese produce 400 to 500 young each year.

"Last year, though," said Sipe, "we produced only 125 and it looks even grimmer this year.

"I don't know whether we will produce any to speak of this year."

The salt buildup from increasing agricultural drainage flowing into the refuge has snuffed out the entire growth of cattails there that provide critical bird-nesting habitat. It also has halved the supply of hard-stemmed bullrush.

Without either, waterfowl production at the refuge is doomed.

That worsening trend already has wiped out fish life at Bowdoin.

"There used to be a big commercial carp fishery here in the winter. They would net them under the ice," Sipe said.

"But there are no fish here now. It is too salty for them."

Selenium may have played a key role in that disappearance.

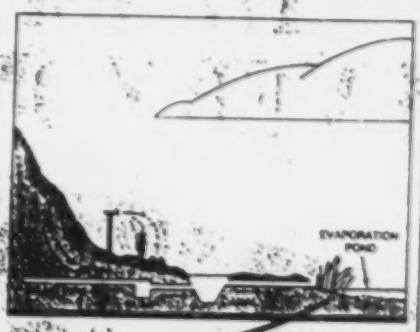
Levels of it found in lake water and mud are many times above the threshhold limits at which survival and reproduction for many species are known to be seriously impaired.

Up from the depths

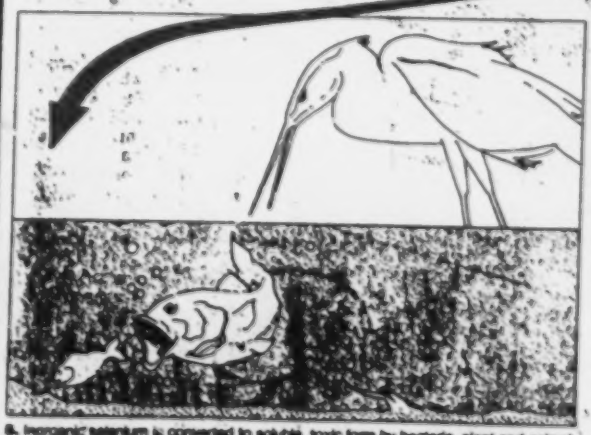
1. Volcanic eruptions spew out inorganic selenium in both gas and ash and magma brings it to the surface.

2. That minuscule layer is concentrated by erosion in the muds of ancient seas and lakes over thousands of years.

3. Geologic forces uplift ancient seabeds into low-lying hills, the muds now compressed into very salty shale rock.



4. (Above) In arid areas, selenium is brought to the surface of rock outcroppings as a salt, by evaporation. Slowly, natural weathering carries it downslope where it is mixed with the valley soil. When irrigation water is added to the dry, salty soil, toxic selenium is flushed through buried and perforated drain pipes. Finally, the selenium-laden waters are collected in sumps, pumped into canals and carried into sinks or evaporation ponds, like those at Kesterson National Wildlife Refuge. There, they concentrate more through constant evaporation.



5. Inorganic selenium is converted to soluble, toxic form by bacteria, plant and animal life in the marsh. Predators quickly concentrate the levels as the toxic element moves through the aquatic food chain.

See graphic/Jim Chaffee

SAC BEE 7-5-85

Harmless trace element begets lethal progeny

By Tom Harris
Bee Staff Writer

Selenium was spewed out in volcanic gases or dust as part of the earth-building process eons ago, tiny bits of something not quite metallic, not wholly organic and, yet, not quite salt either.

Appropriately called a trace element, selenium is virtually non-existent in much of Earth's crust or its concentrations are so low as to be outnumbered nearly a billion-to-one by most other elements.

In some places, such as the Sierra Nevada plate flanking the east side of the San Joaquin Valley, selenium levels are so low that it is unhealthy for animals that graze there.

But in other places, usually in shale formations that are nothing more than the compressed muddy bottoms of ancient seas, the selenium levels are not so benign.

Uplifted by geologic forces that slowly build mountains, those cretaceous shales, or marine muds, hold lethal concentrations of selenium.

The dangerously high levels of selenium are found in the arid rolling hills along the west side of the San Joaquin Valley, giving the historic trough of California's midsection the worst of both of selenium's bizarre worlds.

Other old seabeds occur throughout the world. In fact, they predominate in parts of Nevada, Utah, Colorado, Montana, North and South Dakota, Wyoming, Arizona, New Mexico and Texas.

These seams of selenium stretch as far east as Nebraska and Kansas. There is even an isolated outcropping in the coastal bluffs of Maryland and, on the other extreme, Santa Monica. Deposits also exist as far west as Washington, Oregon and Idaho, though to lesser extents.

But those are all elemental or inorganic forms of selenium, insoluble and comparatively inert as a toxic threat.

It is only after the sun, wind and rain begin to weather and break up its host rock that inorganic selenium starts its lethal organic transformation.

As natural forces begin transporting it downslope to the valleys and plains, specialized bacteria, soil microbes, plants and other living organisms — from microscopic algae to fish-eating predators — convert selenium from inorganic to organic.

That is more than an alphabetical change. Once organic, selenium becomes a very toxic material easily dissolved in — and transported by — water.

In the arid zones where it most often occurs, the dissolved selenium is left behind as a salt crystal above ground or concentrated in subsurface water by plants that take up only the actual pure water, leaving its impurities behind.

The process is greatly accelerated in the San Joaquin Valley and elsewhere throughout the West, when such marginal lands are extensively irrigated, often putting more water on and through the soil structure in a month or a week than would naturally fall in a year.

The poison then seeps into natural springs or, because the water table has risen dramatically, is drained by a system of buried, perforated pipes called tile drains.

The waste water is dumped into master canals, terminal storage ponds, refuges, lakes or rivers and it becomes a lethal, two-edged biological sword. Its solubility and toxicity is magnified at each step in the food chain as smaller organisms are consumed by larger predators.

Such biomagnification or bioconcentration now is considered the greatest threat of selenium. Rapid and massive buildup occurs more readily in watery environments, where the progression from water to simple organisms — plant and animal — to larger predators increases the original concentration up to 4000 times.

Such capacity makes what biologists call "base loading" more critical in the long run than current rates of contamination. Over a few weeks or months, flows of, say, 10 parts of organic selenate in every billion parts of water would pose only minimal risks to most species.

But over the years the steady buildup would draw upon and greatly magnify such contributions, threatening the whole marine food chain.

The mysterious, non-metallic element comes in four forms or oxidation states:

Elemental — the pure ore; most concentrated in copper or sulfur; the least soluble; relatively non-toxic; gray.

Selenide — the gaseous form; evaporates easily and is the most toxic.

Selenite — highly toxic when soluble but normally bound tightly to iron, aluminum or other metals and not available as active toxin.

Selenate — usually very soluble (dissolvable in water) and highly toxic; is easily leached from the soil in this form, in an alkaline environment, and is readily taken up by the roots of most plants; reddish hue in crystaline form.

It also appears that selenium is most dangerous in arid areas, with less than 20 inches of rain a year. Scientists think that long-term substantial rainfall flushes and dilutes the selenium.

The substance occurs in more than just marine shale. Researchers have found it in dangerously high levels nearly everywhere they have found crude sulfur, copper, coal and uranium.

Pure selenium is manufactured from copper ores for a variety of industrial uses, including use in such electrical components as rectifiers and for some kinds of copying machines, photoelectric cells —like the ones that turn street lights on and off automatically — and in dyes, ink pigments, plating solutions, paper processing, anti-fungicides and even anti-dandruff preparations.

Such industrial uses, including the burning of fossil fuels for energy generation, are estimated to contribute more than 2 million pounds a year to global deposition — or recycling — of selenium.

There is some evidence that selenium fallout from airborne pollution may be one of the key toxicants in acid rain.

The Sacramento Bee • Sunday, September 8, 1985 A19

The birds of ill omen in Rio Grande Valley

By Jim Morris
Bee Staff Writer

WESLACO, Texas — The listless egrets and the grackles with the soft beaks are kept in large, walk-in cages in Cyndy Chapman's back yard.

The dead screech owls with the deformed legs are wrapped in paper towels and kept in the kitchen freezer.

Chapman is a volunteer with Bird Rescue in the lush Rio Grande Valley, wintering ground for many rare and endangered species of birds. Her past few months have been trying, to say the least.

She is seeing scores of dead or dying hawks, owls, grackles, herons and doves. There seems to be no logical explanation.

"I think over one-third of the birds I've taken in this year I can't explain their problems," Chapman said. "They're in good flesh, they don't look diseased, but they aren't growing normally, they aren't behaving normally — like standing in a field for three days without moving."

She has been keeping a list of her feathered patients and their symptoms since the first of the year. On Feb. 13, for example, she took in a duck that was having seizures. Two days later there was a hawk that was "out of it" — acting drugged or drunk. On Feb. 18, she had a bronzed cowbird that was "dumpy" and on the 23rd, a great blue heron with tremors.

Bee Michael Williamson

A grackle, born deformed and listless, never had a chance at survival.

Chapman doesn't know what's causing all this misery, but her theory is that "it's something that's building up, not something that's hitting them immediately. It's the same kind of problems we've seen (elsewhere) with heavy metals."

She is no toxicologist, but logic tells her that in an intensely agricultural region like the valley there are going to be substances in the water, soil and vegetation that are harmful to birds.

Pesticides have long been the scourge of the local bird population, but relatively little is known about metals and toxic trace elements, such as selenium, that can cause deformities and strange behavior when ingested in large doses.

Five years ago, the Lower Rio Grande Valley Development Council spent $1 million in federal Environmental Protection Agency funds to study water quality in the valley. The study found elevated levels of the pesticides DDT and DDE and the metals mercury and arsenic, but there was no attempt to find the sources of the contamination, and there was no testing for selenium, which has ravaged waterfowl at the Kesterson National Wildlife Refuge in California.

A sampling program by The Bee, however, turned up elevated levels of selenium in both the Rio Grande National Wildlife Refuge and the nearby Laguna Atascosa National Wildlife Refuge.

The concentrations in mud and algae ranged from 140 to 304 parts per billion. Those are slightly below levels known to be hazardous but a positive indication of biological buildup.

A friend of Chapman's, Linda Gardner, said she resigned as the development council's assistant director of water quality in 1982 because the council either minimized unpleasant data in its final report or simply omitted it.

Gardner said the council bent over backward to protect farming interests and unjustifiably blamed Mexico for any contamination that was found.

"They never really wanted to go and pinpoint these things," she said. "They said, 'Oh yeah, we see it's there, let's move on.'"

"I know that there were a lot of dissatisfied people," said Bruce Elliott, chief of the Water Quality Management Branch of the EPA's regional office in Dallas. Elliott described the study as "a rather unproductive effort."

Ersel Lantz, chairman of the council's Environmental Resources Committee, insisted that the study was "unbiased" and called it "the best . . . and most straightforward" of any that had been made in the area.

"We didn't downplay any of the findings," he said. "All the environmentalists were not happy with the results, all the farmers were not happy, but quite frankly, I think they were viable results."

Lantz added that although metals were found, they "don't seem to be a problem in the waters down here."

Chapman is skeptical. She believes that some insidious toxicant is killing her birds but that local officials are in no great hurry to find it, for fear of antagonizing the farmers.

Chapman did convince the U.S. Fish and Wildlife Service this year to analyze tissues from two hawks and a heron that died in her care. The results have not been released.

Whatever is getting into the birds' systems is making them stagger, vomit and pass blood. Some recover, but others die, despite the painstaking attention Chapman gives them.

Between January and mid-June of 1984, Chapman took in 92 birds, 16 of which she believed showed signs of contamination. Through mid-June of this year, she had taken in 141 birds, 51 of which showed signs of contamination.

She removed the screech owls from her freezer and put them on her dining room table, pointing out the twisted legs on both young and mature birds.

"This one," she said, taking a stiff owl in her hand, "came in seizing and its feet were clenched. It never unclenched its feet."

Selenium: Conspiracy of Silence

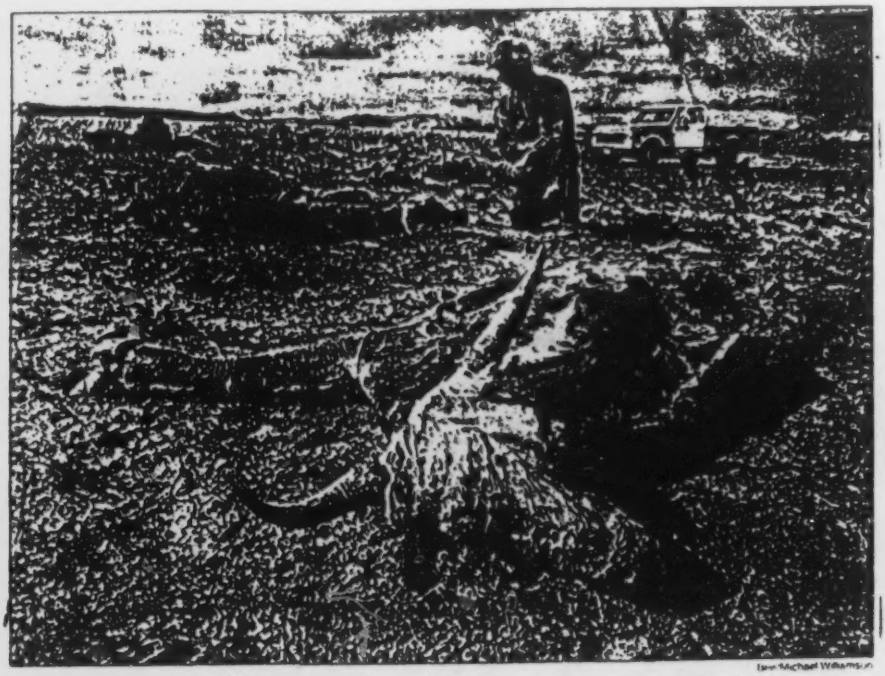
SAC, Bee 9-8-85

Bee/Mike Williamson

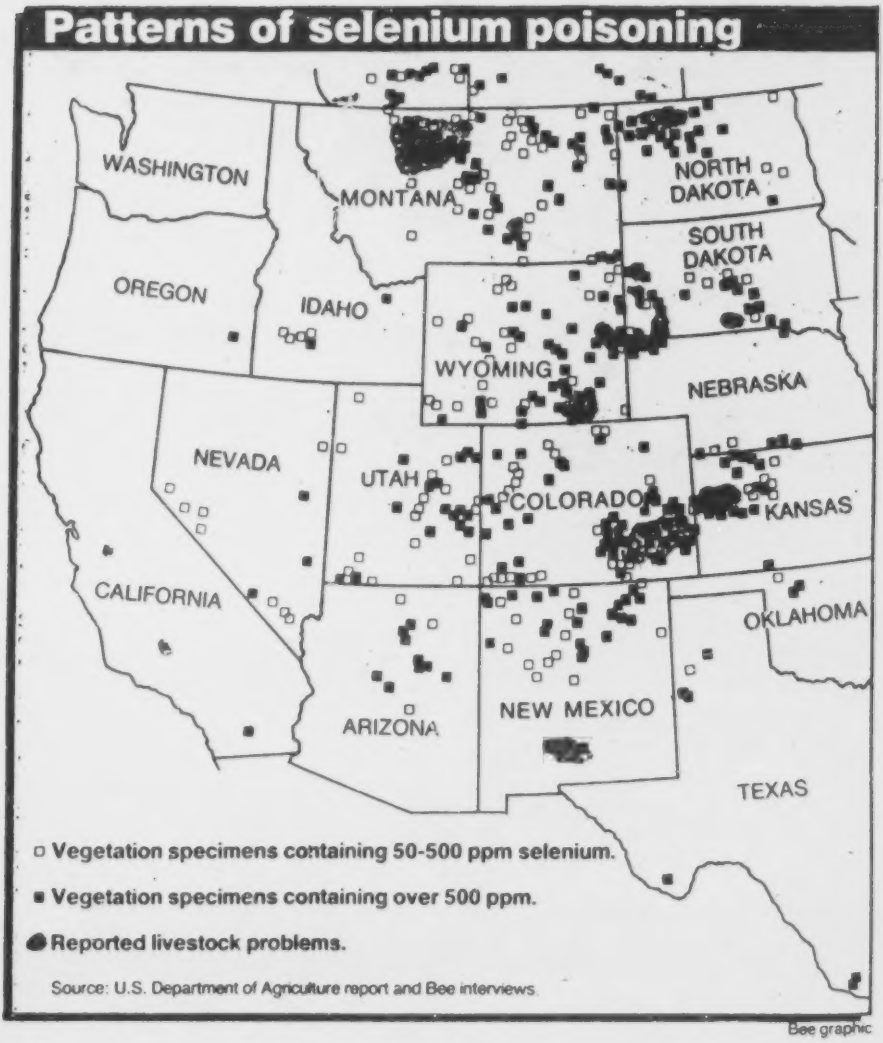
Cyndy Chapman, a volunteer with Bird Rescue, keeps dead birds from the Rio Grande National Wildlife Refuge frozen in her refrigerator. She can't explain the deaths and bizarre behavior of refuge birds, but suspects they are linked to nearby farmlands.

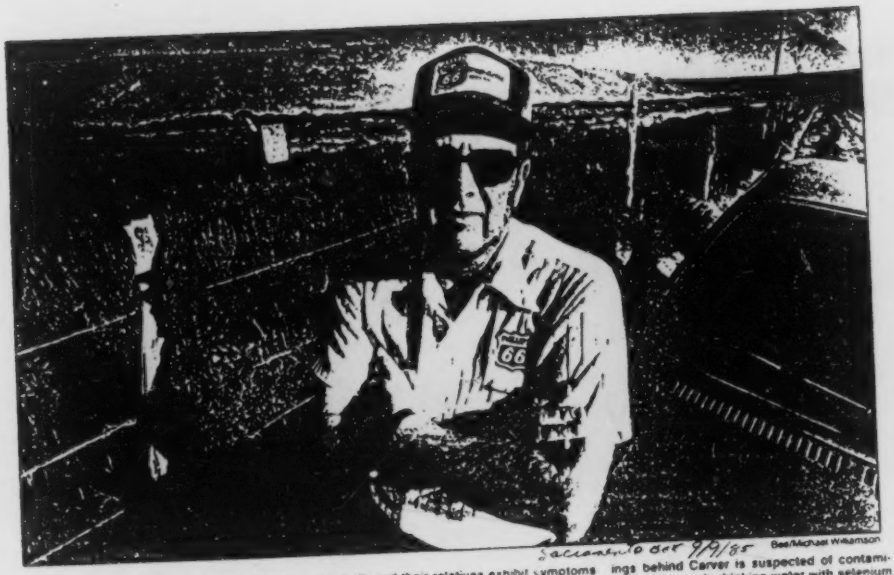
The Sacramento Bee Volume 258 Monday, September 9, 1985

Selenium: Toxic slaughterhouse



Selenium's lethal legacy has hit Western ranchers like Mike Henry of South Dakota with personal and economic misfortune.


Patterns of selenium poisoning
WASHINGTON
OREGON
CALIFORNIA
IDAHO
NEVADA
MONTANA
WYOMING
UTAH
ARIZONA
COLORADO
NEW MEXICO
NORTH DAKOTA
SOUTH DAKOTA
NEBRASKA
KANSAS
OKLAHOMA
TEXAS
Vegetation specimens containing 50-500 ppm selenium.
Vegetation specimens containing over 500 ppm.
Reported livestock problems.
Source: U.S. Department of Agriculture report and Bee interviews.
Bee graphic



Sacramento Bee 9/9/85 Bee/Michael Williamson

What is selenium poisoning? The question has baffled many unsuspecting and confused rangeland dwellers who have seen their livestock die and their relatives exhibit symptoms of toxic illness. Among them is Larry Carver of Milan, N.M. The massive pile of uranium tailings behind Carver is suspected of contaminating his town's drinking water with selenium and causing health problems.

Chemical preys on livestock

By Tom Harris 9/9/85
Bee Staff Writer

Hundreds of livestock — cattle, horses, sheep and swine — in at least five Western states are sick, dead or dying from the same kind of selenium poisoning that has killed or deformed thousands of waterfowl and aquatic organisms in and around the Kesterson National Wildlife Refuge.

The losses to unsuspecting and often confused ranchers adds an alarming chapter to the selenium story unfolding along the western edge of the San Joaquin Valley, where death and deformity in birds and fish have captured national attention.

The refuges are contaminated by irrigation wastes heavily laced with selenium. The livestock, however, are stricken after drinking selenium-contaminated water or eating plants that naturally accumulate deadly levels of the trace element from the soil.

The ingredients for this poisoning are plentiful in the arid West: outcroppings of selenium source rock; low rainfall; and intensive irrigation made possible by massive federal water projects.

These discoveries were made by The Bee during a four-month probe triggered by the Kesterson problems and the federal government's refusal to investigate claims of one of its own geologists that selenium could be found virtually throughout the

See LIVESTOCK, page A4

Selenium: CONSPIRACY OF SILENCE

Second of three parts

How The Bee found out

Bee reporters Tom Harris and Jim Morris traveled thousands of miles through 12 states tracking down rumors and reports of widespread selenium contamination in the West.

Even before they began searching, they consulted government and private geologists, biologists and chemists to find out when, where and how to collect samples of water, sediment, algae and fish.

Scientific methods were established to guarantee the accuracy of both the sampling and complicated chemical analysis. Private laboratory results were cross-checked by established experts.

Harris and Morris conducted scores of interviews with doctors, pathologists, veterinarians, botanists, ranchers and farmers, refuge managers, wildlife biologists and others.

The result of their investigation — the first of its kind in the nation — provides evidence presented in this series of a widespread, and growing, selenium threat.

Livestock

Continued from page A1

West, where conditions are similar to those of the western San Joaquin Valley.

In fact, The Bee found high selenium levels on wildlife refuges in several states. But it also discovered:

• Evidence of dangerous selenium accumulation on farms and ranches in half of the states visited by reporters and in reports and studies about similar conditions in several other states and Canadian provinces.

• The government has known about the selenium danger for decades — most of its voluminous research was conducted 40 to 50 years ago — and has let the findings gather dust on document shelves, doing little or nothing to warn or educate ranchers about the problem.

• Animals suffering from selenium poisoning routinely are sold by ranchers for slaughter and no government inspections are made to detect the dangerous substance before it reaches consumers.

• Farm families in some of the selenium "hot spots" may be suffering serious health effects from eating home-grown food where selenium levels are elevated. A South Dakota doctor specializing in the treatment of human selenium poisoning — he has eight active cases and 30 to 40 patients treated and cured — thinks there are "many, many undiagnosed cases out there."

• Veterinarians know little more than most physicians about the toxic nature or effects of selenium poisoning, often misdiagnosing its symptoms as those of selenium deficiency, a more well-known livestock condition, and worsening matters by prescribing selenium injections or feed supplement.

• Ranchers are loathe to discuss their livestock deaths with outsiders, not wanting word to spread that they have a diseased herd. But piles of dead animals have been discarded in draws or small canyons, out of sight of visitors.

Other dead, dying or suffering animals were discovered or reported in pastures, ditches or stock watering ponds where selenium levels were concentrated by evaporation.

In the northern tier states of Montana and North and South Dakota, changing irrigation practices over the past two decades have built up the water table, causing selenium-laden "seeps" or springs that contaminate stock watering ponds, natural marshes, waterfowl refuges and streams across 35,000 square miles in those Western states alone.

Losses from grazing on naturally tainted soil and where irrigation has greatly increased the flushing of such natural poisons also occur in northwestern Nebraska, much of Montana and isolated pockets in north-central New Mexico, Wyoming, Colorado and even up into the Canadian prairie provinces of Alberta and Saskatchewan.

Soil and algae samples taken by The Bee, and analyzed by a Sacramento laboratory certified by both state and federal agencies, ranged from less than 50 to more than 7,500 parts of selenium for every billion equal parts of sampled material. Water, which usually is less concentrated but provides steady supplies of selenium over time, averages about 236 ppb in Kesterson ponds, where ducks, fish, aquatic insects and other organisms are dying off.

From a ranching standpoint, however, even more significant findings were the prevalence of a family of strange weeds called Astragalus plants, with selenium concentrations ranging up to 90,000 ppb (or 90 parts per million).

Some ranchers claim such levels can fell a mature bull or cow in 30 minutes if it eats even a few such plants. The Bee samples were collected in the spring, when selenium uptake was just beginning. Historically, levels up to 14,500 ppm have been recorded in such plants.

More than just livestock are in danger on Western ranchland.

People who eat meat, milk, eggs or grain grown in areas with high selenium levels may be in danger. Warnings first appeared 40 years ago in South Dakota, then were largely forgotten.

Some 40 cases of human selenium poisoning from such intake were reported in medical journals in 1940. The doctor pleaded with his contemporaries to check selenium as a cause for a set of strange maladies, but no studies have been done.

Neither is any sampling done to detect selenium's presence in market produce, even though it is readily taken up by most grains and much of the nation's grain comes from states known to have areas of high selenium. CONT

Official federal government reports claim there are thousands of square miles of ranch and farmland in the West where there is enough selenium to make the plants that grow in it potentially toxic.

Even so, both state and federal officials have said recently that there is little likelihood of risk because produce from such areas is blended by a national marketing system.

"There is probably tremendous dilution (of selenium) in the national marketplace," said Dr. Jerry Simmons, a clinical pathologist at the Veterans Administration Hospital in Sioux Falls, S.D., where he is studying waterfowl tissue from Kesterson to determine how and why death occurs from selenium.

"But it is possible and could be dangerous if exposure is repeated. We should take a look at it, particularly in affected areas. I think we need to be aware of the threat and look at the risk of local people who consume a lot of local crops from selenium areas."

Simmons said he is not aware of any government effort to test for selenium or any other natural toxic trace elements in meat, milk or crops. He said people who eat a lot of animal liver and kidney tissue, where selenium is most concentrated, are the most likely victims of selenium poisoning. "They should be watched very closely," he said.

Simmons said that liver and kidney tissue from Kesterson waterfowl "look like they came from an advanced alcoholic . . . someone with cirrhosis of the liver. They are loaded with little nodules and are very fibrous, just like an alcoholic," he said.

Dr. Arthur Kilness of Rapid City, a senior surgeon on the faculty of the South Dakota School of Medicine, has treated scores of selenium-poisoned patients.

"Usually, the problems clear up when they (patients) just avoid it (selenium)," said Kilness.

"It all depends on the dose they've been subjected to. It's a function of how much damage has been done. Sometimes, it's irreversible," he said.

"I tell 'em not to eat stuff from their gardens or meat or milk from their animals," said Kilness. "But the symptoms don't always disappear after the insult is stopped."

The South Dakota physician, retired except for his selenium cases, has built up a network of veterinarians and old-time ranchers to track selenium poisoning.

"It's like trying to study the dark side of the moon" said Kilness. "Hardly anybody knows about it and those who do, don't want to talk about it. It's a conspiracy of silence, the 'dirty herd' syndrome . . . they don't want any word out they have diseased animals."

The problem in South Dakota is most concentrated in a band around the heavily wooded Black Hills and in the central part of the state.

Recently unearthed government reports, most of them written 40 to 50 years ago, confirm selenium as the cause of "blind staggers" and "alkalai disease" and indicate that high levels of the trace element exist in dozens of places throughout the West.

In Montana, for instance, similar evidence has been recorded for decades around the southeastern city of Billings and, farther north, in a massive triangle between Great Falls, Havre and Shelby called the Great Falls seeps.

Researchers there have recorded dramatic incidents while trying to identify and correct thousands of selenium-laden saline springs.

Historically, the native grasslands used the available subsurface moisture and there were no seeps. But that land was broken for cultivation. When part of it lies bare for a season, to guard against overusing the soil's nutrient base, that moisture builds up and flushes out the heavy load of salts and toxic elements.

Dr. Marvin Miller, a soil physicist and hydrogeologist at the Montana Bureau of Mines and Geology, recounted one dramatic example of selenium poisoning.

"I can't tell you the name of the rancher. He is terribly embarrassed and would not admit it publicly," said Miller.

"He had five prize bulls shipped from Omaha. They were thirsty when he turned them out and they ran down and tanked up on this bad water.

"They got only 50 to 100 yards away and dropped like a shot . . . dead in their tracks within minutes. It was a horrible sight for him . . . and a very expensive loss," said Miller.

Most of the cattle kills stopped about a decade ago in parts of the "triangle" where the alternate-year cropping was stopped. There are other parts of the troubled region, however, where ranching has had to stop.

"There are places, like the Highwood Bench (on the eastern fringe of the triangle). where they just can't run cattle anymore," said Miller.

Ranchers and veterinarians chalked the deaths up to "nitrate poisoning," according to Miller.

"Gradually, the cattle would get in extremely poor condition and go blind. Then they would start staggering around and many would die," he related.

Those are classic symptoms of selenium poisoning.

And more than livestock have suffered losses.

Ranchers in the Montana triangle also lost plump trout stocked in hundreds of private fishing holes, stock watering ponds that served a dual purpose.

"Nearly every rancher has — or had — his own trout pond. It was a bragging point," Miller said. "But we saw complete die-off in dozens of ponds we visited," he said.

Selenium is the suspected — not proven — cause of the fish kills.

"We asked EPA (the Environmental Protection Agency) to come out and study the tissue. They did come but they . . . looked only at water quality."

The EPA's massive well and surface water sampling in the triangle nearly a decade ago, showed some selenium counts as high as those found at Kesterson.

More than 30 percent exceeded the safe drinking-water level of 10 ppb and some reached 1,800 ppb. The highest water reading in Kesterson was 1,400 ppb, although one sample from a sump feeding the San Luis Drain was 4,200 ppb.

In the southwest, New Mexico ranchers know the symptoms, if not scientific nomenclature, of selenium poisoning all too well.

A cow or horse that eats selenium-laden "loco weed" stumbles around like a sot, unable to find its food or water. If an animal eats wild mustard weed, another selenium collector, its throat will swell so badly that it must be force-fed.

Mention the affliction "blind staggers" or "woody tongue" to the friendly, sun-baked ranch people and you get solemn nods of recognition. Mention selenium and all you get are blank stares.

They simply don't know of any link between it and the crippling livestock diseases.

Chuck Muncy of Lemitar, a tiny community near the Rio Grande River, is still reeling from his losses of two years ago.

"I lost a whole bunch of them (five of a herd of 50) and had to sell 10 or 12," Muncy said. "Some we just had to butcher."

Last year was better, although several cows got sick and couldn't eat or drink.

"But even if they get well, you have to sell them at

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a loss. It's just something about them — they never raise another offspring," Muncy said.

About 25 miles west of the Muncy place is Magdalena, where Ross and Pat Ligon have a large ranch. Selenium-laced loco weed has plagued their livestock for 30 years.

"I'd say every year or two we have some (cattle deaths)," said Pat Ligon. "Some years seven or eight die. It's tragic when a horse gets it. They just roll around and get real sick and can't drink. It's real pitiful."

Selenium makes animals do peculiar, even frightening, things. One of the Ligons' poisoned bulls became extremely agitated and rammed through the side of a barn, then a fence. Fortunately, no one was in the crazed beast's path.

That is a common selenium poisoning symptom. It often causes what cattlemen call "pushing disease" and animals are known to be extremely agitated by it.

There is no medical evidence to prove it, but researchers and ranchers commonly report another bizarre symptom: the "suicide complex."

The ranchers stoically accept such quirks of nature. To them, it's just another unpleasant part of the business.

The health risk to people is even less understood. There has been no monitoring among rural populations where selenium is high, but unrecognized as a threat.

Ranch families often grow their own vegetables, several of which readily accumulate selenium. They also slaughter, cure and eat their home-grown beef; have their own milk cows; and drink water from shallow wells.

"Rural families in areas with high selenium," says South Dakota's Dr. Kilness, " . . . are at very real risk."

That appears to be the case for several families in South Dakota and Wyoming, as well as for the Bill Beard family in Ballantine, Mont., and many others like them, who live where selenium levels are high.

Beard could not see selenium in his irrigation ditch but he could see his horse was in trouble.

Up to its hocks in the cold, numbing water of a drainage pond at the bottom of the pasture, it stood stock-still for hours, not even flinching when examined closely by a stranger. When it did move, later, it could barely hobble, lurching painfully a few inches at a time.

The water at the low end of the pasture is seepage from a nearby unlined irrigation canal that feeds the federal Bureau of Reclamation's so-called Huntley Project in southeastern Montana.

The seepage also flows through naturally occurring selenium deposits in the soil and brings elevated levels of that to the surface with it.

Selenium toxicity in humans causes lethargy, loss of hair, skin sores and rough ridges across fingernails, symptoms Beard says are not uncommon in the valley of the Yellowstone River where he farms.

"There are times where our fingernails are awful brittle. They just pop right off," said Beard, "and my thumb nail has three of those horizontal ridges. "They just barely get started and break right off again. They've been more brittle than ever this summer."

Beard says his own hair loss has been rapid in the past year and that others in his area have complained of similar problems.

A day's drive to the southeast, near the Belle Fourche River in South Dakota, a dairy farmer deals with problems greater than Beard's.

Dairyman Bruner Rhineholdt has been raising milk cows there for decades. He is a classic example of those who don't like talking to outsiders about his problems.

Asked what was wrong with cows in a nearby pasture, he replied: "What cows? How do you know anything's wrong with 'em?"

The reporter replied, "Those over in the draw. What's wrong is that about 30 of them appear to be dead."

Retorted Rhineholdt with a wink, "Oh, those cows. Well, the only people around here who haven't lost any cows are the ones who don't have any."

Selenium was not part of his vocabulary but he ticked off many symptoms of its poisoning in his own herd.

The question of public health came up again during the casual talk with Rhineholdt.

He told of several cases in which he and his sons had to prop up such sick cattle to get them loaded into a truck for transport to the nearest slaughterhouse.

"If we can get 'em to market before they go down, we sell them. Can't put no weight on 'em, no matter how much feed we use. So, there's no sense keeping them out here," he said.

The slaughterhouses take the sick animals with no questions asked, said Rhineholdt. "They never test for anything. But if they are down, they won't take them. Then it's a dead loss for us," he said. (end)

Selenium: Conspiracy of Silence

Sacramento Bee 9/9/85

Fear echoes through toxic wasteland

By Jim Morris
Bee Staff Writer

MILAN, N.M. — Larry Carver leaned on the hood of his pickup truck and looked with contempt at the huge, buff-colored mesa just north of his home.

"There it is," Carver said. "It ruined our property value."

The mesa is actually a pile of uranium tailings 95 feet high, 4,000 feet long and 2,000 feet wide. It contains 18 million tons of powdery waste, the product of 27 years of milling by Homestake Mining Co. in the rich mineral belt of northwestern New Mexico.

Until a decade ago, the worst anyone would say about the tailings pile was that it was ugly and foul-smelling. It represented, after all, the vigor of the mining industry, which simply wasn't criticized in places like Milan.

Then, in October 1975, letters from the state Environmental Improvement Division began arriving at homes in two subdivisions — Murray Acres and Broadview Acres — just south of the Homestake mill. The EID had discovered that well water in the area contained high amounts of selenium, and people were warned not to drink it.

"The state came in and tried to explain selenium to us," Carver said.

"That did two things: It scared the heck out of you, and you lost all your property value the minute it hit the local newspaper."

Homestake was tagged as the source of the contamination. The milling process apparently was forcing selenium — at levels 10 to 200 times the state level for safe drinking water — into the shallowest water table. The water was killing gardens and, some say, making people sick.

In early 1976, Homestake agreed to provide free bottled water to the affected homeowners. But cleanup negotiations between the company and the state went slowly — too slowly for most people's tastes.

In late 1981, the site was deemed bad enough to be put on the Environmental Protection Agency's Superfund toxic cleanup list. The EPA joined the discussions with Homestake, and the two parties signed a consent decree in mid-1983.

The EPA, in a complaint filed the day the agreement was signed, called the tailings pile an "imminent and substantial threat" to public health and the environment. Selenium and uranium were identified as the two major contaminants leaching into the groundwater.

The terms of the consent decree were that Homestake would pay to connect about 100 families to the Milan city water system, pay their water bills for 10 years and continue operating a system of extraction and injection wells to restore the aquifer.

Sixty-two homeowners, meanwhile, were preparing their own class-action suit against Homestake. They filed the suit a few weeks later, describing the tailings pile as "an offensive and unhealthful nuisance [and] secondary controls ... to lower the [selenium] contamination in the liquid discharge from the mill."

The case never got to court. Homestake offered to pay each plaintiff an undisclosed amount as compensation for property devaluation, and the majority voted to settle.

Carver and others wanted to press on with the suit but were tired of fighting and had no more money for legal fees. Carver wishes the suit — as well as the EPA's — had gone to trial so all of Homestake's dirty laundry could be aired.

"We think they should have given us more than just that little water system," Carver said. "Eventually, we think, the bad water will come to town. But we're just little people."

The EPA, he said, "let Homestake off the hook."

John Parker, general manager of the Homestake operation, said the company began monitoring groundwater beneath the tailing pile soon after the mill opened in 1958. But it was looking for radioactive waste, not selenium, and its method of investigation was crude by today's standards.

Former Murray Acres resident Ted Allen and his wife, Patricia, moved to Murray Acres in 1969. Patricia stayed at home to raise their five children and drank lots of tap water each day, never dreaming that it might be dangerous.

Within a few years, she had developed some puzzling maladies. Her hair fell out in bunches. She was lethargic and had irregular menstrual periods.

Patricia had a blood test, and sure enough, her doctor found elevated levels of selenium. She stopped drinking the water and her problems gradually went away.

How did it happen? This part of the state is loaded with uranium ore, and uranium ore is loaded with selenium. There's a place northwest of here named Poison Canyon because of all the selenium-absorbing plants — "poison" to livestock — it contains.

The threat posed by the pile was recognized as long ago as 1961-63 by a state engineer, but his warnings weren't taken seriously. Selenium and other toxicants were allowed to accumulate in the aquifer for the next 12 years.

As soon as the word got out, people began worrying about their health. What would happen to them 10 or 20 years down the road? Might the contamination manifest itself in their children? Their grandchildren?

The EID did a preliminary epidemiological study within Murray Acres and Broadview Acres in 1983. Researchers said they found no widespread or unusual illness that could be attributed to selenium or any other foreign substance in the water.

Some residents denounced the study as incomplete, saying it excluded many people who left the area when the uranium mill began cutting back.

None of the doctors talked to Patricia Allen, although she wanted to be interviewed.

"We felt we had problems," said Ted Allen. "I was vocal about it, and Dr. (Jonathan) Mann (then the state epidemiologist) refused to take any information for me. He said he only wanted people who still lived there. Well, hell's bells, we lived there for 11 years."

Mann no longer is with the EID; he is working in Zaire for the national Centers for Disease Control. The current state epidemiologist, Dr. Harry Hull, helped Mann with the 1983 study and explained how they decided whom to interview:

"We picked the people we thought were at the highest risk of having health problems — those who lived closest to the pile — and 1½ miles seems to be a reasonable cutoff." Seventy-three families — 200 people — were included.

"I think if we had found a significant health effects, we would have traced all the people who lived there, but on the basis of the study, that did not seem reasonable," Hull said. (END)

Dr. Arthur Kilness has buried himself in research on the causes of selenium poisoning and has treated its human victims, but he has labored virtually alone.

35-year search for truth, but who will carry on?

Sacramento Bee 9/9/85

By Tom Harris
Bee Staff Writer

RAPID CITY, S.D. — His fascination with selenium poisoning of humans started more than 40 years ago.

Now, Dr. Arthur Kilness can recite the list of the subject's practitioners — past and present — without taking a breath.

It started with Dr. Einar Leifson, head of biology at the South Dakota School of Medicine in 1940. Leifson, under whom Kilness later studied and taught, developed a selenite culture still used worldwide to identify the salmonella bacteria that causes typhoid fever.

Another early disciple was Dr. Ray E. Lemley, one of the first to study and the first to report human selenium poisoning in the medical literature.

The list may end with Kilness.

Ironically, Kilness is on the verge of giving up 35 years of work in the subject just when its implications for human health are beginning to escalate rapidly.

"I'm close to being a burnout on the subject," said Kilness. "I've got a lifetime of files on the subject and I don't know who to pass them on to. I'm ready to call it quits."

In a paper published in the medical journal Lancet 45 years ago, Lemley reported the first known natural case of human selenium poisoning. A year later, after urging his fellow physicians to be more alert to the subject, he reported finding "more than 30" more cases in North and South Dakota, Montana, Wyoming and Nebraska.

"He was convinced there was a lot more of it — human poisoning — around than was being diagnosed or treated," said Kilness. "And so am I. Nothing much has changed in all that time.

"People still don't like to admit that the stuff kills animals and harms people but I've seen it do both for a very long time. It's like a conspiracy of silence. Nobody talks about it . . . even here."

Selenium poisoning has tainted grain and other crops, poisoned water and livestock and prompted major studies whose findings have been forgotten over the years. It now threatens people, wildlife and waterfowl from Kansas to California.

Kilness adjusts his glasses, glances at a dogeared case folder in his bony surgeon's hands and says:

"I could show you 40 or 50 more that I have handled that are just like this. It's taken me a lifetime to compile them."

This one is the medical record of one farm family he has treated for selenium poisoning.

There are others, some with colored pictures of dead cattle, pretty but deadly poisonous weeds, and scores of dead sheep scattered on a hillside.

One shows men with skin sores, abnormal fingernails and hair loss.

They were patients who lived in the area and whose selenium levels were highly elevated. Kilness says tests of their home-grown food also revealed "high levels" of selenium.

There are case studies, medical records, test results of samples from animals and humans; press clippings on stories about the subject from all over the world. Kilness is quoted in many of them.

"Some people think I am a nut on the subject, but they haven't spent a lifetime studying it, in both people and animals," said Kilness. "It is a big problem throughout many places in the West but not many people want to talk about it."

He likens the years of building a reliable network of informants to "studying the dark side of the moon."

One link in that chain of sources is Dr. Paul Wittenburg, a veterinarian in Hot Springs, S.D., and once a member of the state's Board of Veterinary Examiners.

"It took a long time but he finally came around," recalled Kilness.

"When he realized how widespread the problem was, he was astonished. He had never been taught anything about the toxicity of selenium during school.

"So, he put a question about it on the next exam and of the 44 people trying for their vet's license, he said that only two got the answer."

That ignorance of selenium poisoning is a point few veterinarians contest.

Dr. Dave Jessup, a staff wildlife pathologist and veterinarian with the California Department of Fish and Game, graduated eight years ago from Washington State University.

Jessup heads a program to look for areas where there is too little selenium, for the lack of it in some animals can cause almost as many problems as an excess.

Kilness acknowledges selenium's critical value to many animals, though he is less positive about theories that it is just as critical to healthy human growth.

One of the documents in his files is a 1963 study by the South Dakota School of Mines and Technology that reveals "considerable livestock losses from grazing seleniferous forage," including discovery of "large numbers of dead sheep on land whose owners denied any such impact."

The subject always has been controversial, with a lot of bruised egos among the participants.

Kilness may have been its latest victim. He says he was dropped from a Harvard University study of selenium health effects after making critical comments about selenium on a "60 Minutes" TV show about the Kesterson National Wildlife Refuge.

He believes the pressure was applied by the U.S. Department of Agriculture.

"I don't have any stake in who's right. That isn't the important thing," said Kilness. "The only important thing is what's right.

Nightmare began life as a dream

By Tom Harris
Bee Staff Writer

Sacramento Bee
9/9/85

EDGEMONT VALLEY, S.D. — The soft carpet of untamed grassland stretches off to the horizon in every direction, broken only by the distant outline of the Black Hills to the north.

The husky young rancher brought his rattly pickup to a shuddering stop at the top of a rise, near what looked like a pile of junk and old rags.

"It hit me like a bolt out of the blue," said Mike Henry, a third-generation rancher who has had painful, firsthand experience with the effects of selenium on both humans and livestock.

He scuffed the debris around with a well-worn boot.

The "old rags" were cattle carcasses, dozens of them piled crazy-quilt atop each other.

"There's an old well right here, about 100 feet deep and 3 feet across . . . and it's full of them," said Henry, a 32-year-old father of three. "The prior owner used it for his bone hole, but I didn't know that, then.

"I've got a couple of my own piles, now, just over the rise," he said, pointing to the south.

There, outlined against the lush spring green of the prairie country of southwest South Dakota and framed by the widest sky in the world, were the relics of the lethal and little-understood natural poison at work.

The sight and smell were jarring: hundreds of dead livestock, worth tens of thousands of dollars, rotting, bloated or bleached white by the hot prairie sun.

"It's not a pretty sight, not now and not when they are dying either," mumbled Henry. "It's more than just the money. A rancher loves his animals. You hate to see them suffer."

Sometimes, the suffering goes on for weeks, months and even years.

"We're still trying to put weight back on some of the cows that nearly died that first year we came on the place," Henry said of that dark day five years ago when he bought the 1600-acre spread.

"They just can't seem to get over it. They're still bone thin."

It was more sudden for four cows and 12 calves, that became selenium victims in the first four months. They are only bones now, period.

None of the dozens of subsequent losses was more sudden than the one this spring: "She ate just one of those damn weeds . . . it must have been the only one in the pasture," Henry recounted, glumly.

"Boom. She was down in 30 minutes. Dead as a stone. We lost both her and the calf she was carrying."

The weed was part of a poisonous family with innocent botanical names: Stanleya pinatta (desert — or prince's — plume), Astragalus bisulcatus (purple vetch) or Astragalus racemosus (yellow loco).

They were no kinder to Henry's sheep.

"The conception rate was terrible. We got only 89 ewes when we should have had at least 120 and most of them were badly deformed," said Henry.

They had "clubfeet, legs turned almost inside out they were so crooked. A lot of problems like that," he said, ticking off other deformities, such as misshapen heads and eyes, similar to those affecting selenium-poisoned waterfowl at the Kesterson National Wildlife Refuge in Central California.

The sheep have become "hooked" on the "loco weed," a trait not understood but not uncommon with livestock and selenium.

"It seems hardest on them (the sheep)," said Henry. "They really get hooked on it. You drive them out and they go right back to it, every time. The cattle try to avoid it when they can."

Henry has few options and a dream he can't keep alive.

The wood-frame house is weather-beaten, the paint chipped and peeling. It is not the dream ranch home — framed by manicured lawns, shade trees and a smartly painted fence — that Henry or his wife, Bonita, had in mind.

Henry has had to take a full-time job with the county Road Department. Instead of raising all his own feed, he must buy a lot of it now to keep his animals going.

And there are the grocery bills, higher now without the garden vegetables, milk and home-cured beef.

The furniture inside is an obviously lower priority than clothes for the three children, sons Ray, 8, and Casey, 6, and their little sister, Dawn.

The little one sits on her mother's lap, on the back porch, her thick eyeglasses framing crossed eyes.

"We can't even have fresh eggs, for heaven's sake," said Bonita, in obvious frustration. "We can't raise chickens out here. They are all deformed.

"It really makes you feel cheated. It isn't like we dreamed it would be, at all."

Henry still gropes for words when trying to explain his feelings.

"What can we do?" he said, shrugging his shoulders helplessly. "Everything we've got is tied up here. We can't sell it. We can't walk away and start over because we have nothing to start over with.

"We're just trying to figure out some way to stay alive and make it work," said Henry.

"It looked great at the start. The prior owner said it was clean pasture, that he never had any trouble with his cattle," Henry said. "But later, we found the bone hole and our cows and sheep started dropping.

"The vets just don't know anything about this. They keep saying it's selenium deficiency and prescribe more of it. Hell," grumbled Henry, "we had our cattle tested after a while . . . and they were loaded with the stuff."

Their blood contained 5 parts per million, hair 12 ppm and the milk 10 ppm, all high levels. Levels two to five times lower have been associated with animal toxicity.

Henry admitted that he won't let his family eat any of his beef, even though he regularly ships them to market. "I don't know whether that is right, whether one person will get enough of it to hurt them. But we should. Someone has got to start asking questions."

Later, striding back to the pickup, Henry scuffed the light loam beneath the native prairie grasses.

"This is our hottest pasture. Selenium levels here are 19 to 90 parts per million. The cattle can stand it for about three months, if you keep them away from the accumulator weeds," said Henry.

Then, sweeping his arm in a wide arc to the west, he said: "This whole valley, clear up into Wyoming, is like this.

"Oh, the other ranchers won't talk to an outsider about it. Hell, they will hardly even discuss it with us." (END)

In beauty, the poison beast

SACRAMENTO BEE 9/9/85

By Tom Harris
Bee Staff Writer

Nature colored them shades of brilliant purple, bright yellow and soft, creamy white.

But the soft hues and tiny trumpet-shaped blossoms of a family of odd botanical specimens belie the danger of their lethal nectar: selenium in concentrations toxic enough to bring swift, agonizing death.

Ranchers who have seen it happen swear that mature cattle have died almost in their tracks from eating just one or two of the bushy "loco weeds."

Researchers have discovered historical accounts of selenium poisoning livestock dating to Marco Polo's exploits in China, the Lewis and Clark expedition, Gen. George Armstrong Custer's forays before the battle at the Little Bighorn and the exploration party of Gen. John C. Fremont.

Botanists know the plants by innocent-sounding floral names with Latin subtitles: Astragalus pectinatus, Astragalus bisulcatus, Stanleya pinatta, Stanleya viridiflora, Happlopappus fremontii and Oonopsisis condensata.

To farmers and ranchers, the names are more recognizable as gray hook, purple vetch, yellow loco, prince's plume, turpentine weed, curlycup gumweed and the like.

By whatever name, they belong to a unique family of selenium "accumulator" plants that need high levels of the substance that brings death and deformity to all who consume it to excess.

If the plants were better known, they could be obvious and helpful flags of danger.

But only a handful of botanists know the subtle distinguishing features well enough to recognize which dozen or so members of the 2000-species family are the high accumulators that grow only where selenium levels in the soil are high enough to be dangerous.

To confuse matters further, other plants like wild mustard and woody aster are known to concentrate dangerous levels of selenium, too, and about 36 other members of the Astragalus family accumulate moderate amounts of the trace element.

Researchers have known for decades that a wide family of food crops — cereal grains, sugar beets, cantaloupes, sunflowers, corn, broccoli and other leafy vegetables — also readily take up selenium.

Evidence of toxic levels of selenium has been recorded in several samples of grain grown in known selenium hot spots of South Dakota, Kansas, Nebraska and other Western states.

What has not been studied yet is how, or if, the accumulator plants use selenium for their growth or whether they merely have learned to tolerate high concentrations of it.

Those plants also play a bizarre converter role, changing relatively inert and non-toxic inorganic selenium into the extremely toxic and soluble organic form.

That sharply increases the toxic danger because once the accumulator plants decompose, the organic selenium can be absorbed by most other forms of vegetation, especially pasture grasses, that cannot use or convert the original inorganic form.

The success of these botanical chemical factories is attested to by reams of research and test results.

Accumulator plants growing in soil with only 2 parts per million of selenium are known to concentrate the levels to 90 ppm.

The most toxic level ever found in an accumulator plant, however, was recorded 50 years ago by Professor Orville Beath of Laramie, Wyo., who first advanced the concept of accumulator plants in 1934.

Sampling in the Edgemont Valley that straddles southwestern South Dakota and southeastern Wyoming, he recorded 14,500 ppm of selenium in an Astragalus racemosus in the drainage ditch beside Highway 16.

US government quashes efforts to probe selenium

Bee investigation may spur hearings in Congress

By Jim Morris
Bee Staff Writer

and John Johnson
Bee Washington Bureau

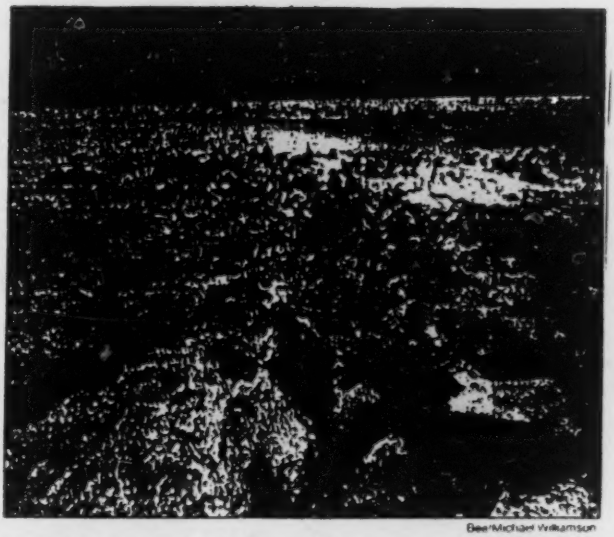
Interior Department officials may be called before Congress to answer allegations that they suppressed efforts to mount a major search for selenium in drainage flows from federal irrigation projects throughout the arid West.

Commenting on reports in The Bee that dangerous levels of the lethal soil trace element have been confirmed in seven states and indicated in eight others, Rep. George Miller, D-Martinez, said:

"If the reports turn out to be accurate, you bet we plan on doing something. First we will start by finding out why the Department of Interior at least misled ... and at worst lied to the committee" when officials assured Miller that the department would do a detailed search of other federal projects to see if similar contamination was occurring there.

Interior Department officials told

→ See REACT, page A14



Bee/Michael Wilkamson

Testing for selenium or reading government archive reports on the issue might have prevented toxic poisoning at places like the Kesterson refuge.

Officials reported wary of suits, cleanup bills

By Tom Harris
Bee Staff Writer

The Department of Interior has suppressed efforts to seriously study potentially lethal selenium problems in hundreds of major federal water projects throughout the West. The Bee has learned.

Reportedly fearing lawsuits and huge long-term cleanup costs, the agency stalled efforts for a thorough investigation and branched off the issue of widespread selenium contamination with a limited and cursory "review" that found only "minor problems (but) no direct evidence of wildlife impact."

In sharp contrast to that, biological samples collected by The Bee turned up hazardous levels of selenium in seven states and evidence of a dangerous buildup of the toxic element in eight others.

SAC. Bee 9/10/85

Granted anonymity because they fear job reprisals, sources familiar with the quashed Interior Department investigation told virtually the same story.

Interior Secretary Donald Hodel ordered an expanded search March 28 for any problems on other federal water projects similar to those causing death and deformity in waterfowl and wildlife at the Kesterson National Wildlife Refuge in Central California.

A team of U.S. Geological Survey scientists, Fish and Wildlife Service biologists and Bureau of Reclamation officials met in early April and drafted a plan to comply with Hodel's order. The chief hydrologist for the Geological Survey approved it and sent it to a five-member review committee.

"It was reviewed, and approved, all the way up the line," said one of those involved in the work plan to extensively check some 427 bureau water projects. "The committee approved it and sent it to Broadbent."

That, apparently, was as far as it got.

On April 22, Robert Broadbent, assistant Interior secretary for water and science, asked the office of the solicitor, the in-house lawyer for Interior, for a legal opinion about undertaking "a broad water-quality assessment" of Bureau of Reclamation project drainage.

Broadbent is a former commissioner of the Reclamation Bureau, which built many of the projects.

"That's when it disappeared into the black hole. They killed it, apparently because the solicitor said it would raise serious questions about legal liabilities wherever it (selenium) was found," another source said.

However, a spokesman for the Interior Department told The Bee that no opinion or ruling has been issued in 4½ months.

Legal and financial implications raised by prospects of many other Kestersons are overwhelming.

Lawsuits already have been filed against the Bureau of Reclamation in the wake of the Kesterson discoveries and more are expected as the contamination spreads.

Financially, the bureau faces Kesterson cleanup costs estimated at between $37 million and $195 million. In addition, long-term drainage treatment alternatives for the entire San Joaquin Valley could surpass $1 billion.

If forced into costly cleanup and drainage treatment systems in other troubled areas, the numbers could escalate rapidly.

They also could greatly compound the Interior Department's efforts to avoid violation of the international Migratory bird Treaty Act, which prohibits the killing of any migratory waterfowl except by regulated hunting.

Interior Department spokesman Mitchell Snow said the plan for the comprehensive testing — it would have been the biggest water-quality study of agricultural return flows ever undertaken — has not been killed but is merely "under review."

Asked for results of the department's "broad reconnaissance" — supposedly conducted by regional offices of the Reclamation Bureau as an alternative to the more detailed proposal — Snow said:

"In response to the directive from the secretary (Hodel), both the bureau and the Fish and Wildlife Service undertook a broad reconnaissance to identify projects similar to Kesterson.

"From what I understand," he said after being briefed on the subject by agency officials, "neither of them found anything that you would define as a Kestersonlike situation.

"They found only some minor problems on which we must remain vigilant but there was no direct evidence of wildlife impact."

There is some question about whether even that broad reconnaissance was done by all regional offices of the agency. It wasn't done in the bureau's largest division, the Mid-Pacific Region with headquarters in Sacramento.

Assistant Regional Director Lawrence Hancock said his office has not searched for selenium-related problems anywhere other than at the immediate Kesterson area.

"No, we haven't looked for that in other states or even other parts of California," said Hancock. "The state is primarily looking after the statewide aspect of it. We haven't looked into that in detail but we feel that what they are doing will complement our efforts."

If it had looked, the agency would have found dangerous levels of selenium in other parts of its Central Valley Project in the San Joaquin Valley; in the Imperial Valley, which drains into the Salton Sea National Wildlife Refuge in Southern California; and in and around the Newlands project, which drains into the Stillwater National Wildlife Refuge near Fallon, Nev.

The Bee did look in those places and found elevated selenium counts there, some in a danger zone comparable to Kesterson.

Hancock did say, however, that the agency already is revising an archaic land classification system to sample for toxic elements, such as selenium, arsenic and others, before massive projects are built.

"We are looking at trace elements for the first time in that process," said Hancock. "That is not an official policy yet but it will be and we are actually doing it now before the application of water to any more new lands."

Hancock acknowledged that such a system would have prevented irrigating selenium-laced lands in the first place or, at least, provided a safe solution beforehand.

Reading any of the hundreds of reports on the subject in government archives could have accomplished the same thing. Most of them clearly warn of the widespread selenium danger on arid Western lands.

Now, with the detailed Interior Department study apparently quashed, selenium discoveries may be put on hold once more.

Initially, planners identified 250 federal irrigation project areas, the drainage from which flows back into wildlife refuge areas or into rivers, lakes or res-

(CONT)

Sac. Bee 9/10/85

ervoirs used for drinking water, irrigation or recreation.

Later, the list was expanded to 470, ranging in size from a few thousand acres to hundreds of thousands in states from Oregon to Kansas, Montana to Texas, California to Colorado.

The plan called for a quick screening of sites by qualified experts to identify areas needing extensive attention.

The Geological Survey would have selected sites for detailed investigation and been responsible for collection, measurement and analysis of samples, though the work would have been done by teams drawn from both agencies.

The Geological Survey also would have written the final reports, with Bureau of Reclamation cooperation.

Those reports would have been based on samples of surface and subsurface water on farms, in drains, in and around wetlands and refuges, and rivers or lakes used for drinking water and recreation.

The Geological Survey, which has long maintained its scientific independence on such issues, insisted that all data be made public.

The study targets were to have been identified by April 19, individual work plans completed by May 6 and the actual fieldwork started not later than May 13.

Far more than selenium would have to be looked at.

Copies of the plan obtained by The Bee show an extensive list of contaminants usually associated with farm drain water.

It includes 35 different constituents, including heavy metals like mercury, lead, cadmium and chromium; toxic trace elements like selenium, arsenic and boron; dissolved salts like calcium, sodium and chloride; and nutrients like phosphorus, ammonia and nitrogen.

If carried out, it would be the most extensive survey ever undertaken of agricultural drain water and its contaminants.

The subject has attracted increasing attention as the big water-diversion projects have siphoned off more and more clean water for irrigation and left the wetlands and refuges with the salty, contaminated runoff to sustain waterfowl and wildlife.

One Interior Department source close to the process said suppression of the work plan "is a clear act of bureau collusion" to "keep the lid on how widespread the problem really is."

Added another source who was privy to part of the work, "It's dead. We haven't heard so much as a word back. Not 'yes.' Not 'no.' Not even 'maybe, but differently.' There has been no reaction, no response. No effort to modify or implement what was recommended.

"To say that we are surprised is putting it mildly."

(-210)

The federal government has tiptoed around the issue of selenium poisoning in the West reportedly because of concern over potential lawsuits and long-term cleanup costs.

A haunting message from neglected past

SACRAMENTO BEE
9/10/85

By Tom Harris
Bee Staff Writer

Nearly a century ago, one hand of the federal government was guiding the manifest destiny of Western deserts, to make them bloom like a rose with massive irrigation projects.

At the same time, another federal agency was uncovering the poisonous threat of the natural trace element selenium to people, livestock and crops raised on those same arid lands.

Unfortunately, the agencies — the Department of Agriculture and the Department of Interior's Bureau of Reclamation — shared neither mission nor findings. As a result, extensive evidence of the selenium danger was ignored and major water diversion projects were built on arid lands, projects that now threaten to create serious selenium contamination problems.

That communication failure now haunts those agencies and a lot of innocent ranchers, farmers, livestock and wildlife.

"The major reason that one hand didn't know what the other was doing, is that the toxicity of selenium is hidden in obscure journals," said pathologist Dr. Jerry Simmons, chief of the clinical laboratory at the Veterans Administration Hospital in Sioux Falls, S.D. He is now studying how selenium works its lethal damage.

"It is amazing what we find when we go back and read some of the literature," said Simmons. "I guess that is why they call it re-search."

In the wake of dreadful deformities discovered in waterfowl at the Kesterson National Wildlife Refuge, what "re-searchers" at the U.S. Geological Survey in Menlo Park found was stunning, indeed.

Dating back nearly 100 years were a series of reports on the potent toxicity — and proliferation — of selenium throughout the West, centered in the Rocky Mountain belt but extending to the Plains states of the Dakotas, Nebraska and Kansas, and beyond.

From Kansas in 1891, Wyoming in 1893, Nebraska in 1904 and South Dakota in 1930 came studies packed with evidence of the fateful toll of selenium on livestock, its contamination of a wide range of grain and other crops, and its bizarre botanical affiliation.

The historical-literature vaults yielded much more, most from repositories of the Agriculture Department and its various experiment stations that funded and did the fieldwork.

There are extensive bibliographies, incisive geological mapping of the host rock formations, complicated biochemistry reports and dramatic accounts of the poisonous effects on a wide range of animals.

While the differing missions and hierarchies of the two bureaucracies may have accounted for part of the communication gap, World War II was another factor. According to those unearthing many of the valuable volumes, all but war-related research was interrupted in the 1940s, just as scientific interest in selenium was cresting.

"This was a very hot subject around here back then," said retired South Dakota physician Dr. Arthur Kilness. "But it was dropped after World War II broke out and it just never started up again. It just dropped through the cracks."

Other researchers say the field suffered as experts retired or moved to other subjects.

Simmons, the clinical pathologist, feels that location also had something to do with the lack of attention to old findings.

"Most of these problems were occurring where there was no great medical or academic interest, areas of sparse population," he said.

"If this had happened in Boston, say, you would have seen all kinds of interest, money and attention. The research wouldn't have petered out."

In 1961, fearful that many of the original selenium experts had either died or soon might, Cecil Wadleigh, then chief of research for the federal Soil Conservation Service, coordinated pulling all the historical work together in one publication, while there was still time.

Even then, most of the original reports either were out of print or in very short supply.

There were dozens more technical journals to be found and checked. The biggest clutch came from 1930 to 1940, when the scientists were proving that the toxicant in loco weed was selenium and that it was poisoning crops and animals and probably people throughout a number of Western states.

Unfortunately, history repeated itself.

The compendium of Wadleigh's five-member team, "Selenium in Agriculture" published as "Agriculture Handbook No. 200" in January, 1961, also was largely ignored by those who might have benefited the most — the Interior Department and Reclamation Bureau.

Ironically, the Interior Department was a participant in the 1961 handbook, along with the Agriculture Department's research service and the Geological Survey.

It, too, eventually went out of print without much fanfare.

The volume came to light again only in the wake of the Kesterson discoveries, when T.S. Presser and Ivan Barnes of the Geological Survey went to the agency's Menlo Park library file and found 25 pages of historical literature references totaling 325 separate reports.

Now, most of those are being circulated among a new cadre of "re-searchers" — biologists and geologists — as rapidly as copying machines can reproduce them.

Two-headed monster of destruction

SACRAMENTO BEE 9/10/85

By Tom Harris
Bee Staff Writer

Selenium is a Jekyll-and-Hyde element.

Too much causes poisoning or toxicity, with painful, sometimes swift death or horrid, twisted deformity.

Too little turns muscles to putty, makes bones fragile and severely damages offspring.

Just enough in livestock and some wild animals produces healthy growth. There is scientific division about whether it does the same for humans or plants.

As a human poison, selenium hasn't been studied much outside South Dakota, even though there have been reports of human toxicity from it in Nebraska, Wyoming, Colorado and New Mexico.

There are parts of China where infant death has been blamed on Keshan disease, or selenium deficiency. In another nearby province, however, more than half the people in five villages suffered impaired health when a drought ruined the rice crop and forced heavy reliance on locally grown crops high in selenium. The element was leached out of nearby coal deposits into the soil and groundwater.

There are other puzzling contradictions.

Selenium once was suspected of causing cancer.

Now, most experts have discarded that notion because the early research work was seriously flawed.

Instead, the National Cancer Institute, Harvard University and others think selenium blocks, not causes, cancer and are doing studies to prove it.

The same schizophrenic personality appears in selenium's interaction with members of the toxic heavy-metal family.

In some cases, it blocks or impairs the potent toxicity of cadmium, mercury and arsenic by somehow neutralizing the poisons or by protecting cell membranes against assault.

But at other dosage levels, it magnifies the cell damage in what scientists call a synergistic effect, where the simultaneous action of separate components is greater than the sum of their individual effects.

The issue of safe or correct dosage is a matter of continuing discussion.

For most adult humans, medical researchers have narrowed the range for tolerated exposure to about 200-300 parts per billion. But that varies with the age, health and genetic makeup of the individual.

For the very young, old or weak, those numbers may be far lower. For stronger or even just physiologically different people, they might be as high as 1000 ppb.

Most Americans average a daily intake of selenium from all sources of about 170 ppb or micrograms. They usually begin to suffer ill effects at 800-1000 ppb. Serious toxicity usually occurs when exposure reaches 3000 ppb, or 3 parts per million.

The most likely early effects are loss of hair; finger and toe nails becoming brittle or showing unusual bumps or ridges; and skin sores.

But if exposure persists or worsens, symptoms can rapidly progress to extreme lethargy, nervousness, numbing and tingling of the extremities, headaches, dizziness, paralysis, motor disturbance and even birth defects.

Though there is suspicion of birth deformities in humans, none has been proven.

But at the Kesterson National Wildlife Refuge, pictures of wingless hatchlings with clubfeet, twisted and corkscrew beaks and an eyeless face full of feathers touched a national conscience and bureaucratic nerve.

While it takes much larger doses to impair the health of exposed adults, selenium takes an awful toll at the reproductive stage of life.

Among its many other bizarre or discriminatory characteristics, selenium has a profound affinity for protein, and the makeup of the male sperm and female egg is largely protein.

There is another reason why its worst effects are visited upon the young, old and weak.

"At the reproductive stage and with infants," says Dr. Arthur Kilness of Rapid City, S.D., "that happens for two reasons: the prevalence of protein and the immaturity of the body's immune system.

"In the case of the old or ill," said Kilness, who has been treating selenium-poisoning cases for 40 years, "it is just as obvious. The body defenses are low and unable to ward off attack." (END)

Senator MURKOWSKI. Let's go on here. Mr. Kirk Koepsel, conservation chairman, South Dakota Chapter of the Sierra Club, we look forward to your testimony, sir.

STATEMENT OF KIRK KOEPSEL, CONSERVATION CHAIRMAN, SOUTH DAKOTA CHAPTER OF THE SIERRA CLUB, PIERRE, SD

Mr. KOEPSEL. My name is Kirk Koepsel, I am conservation chairman of the South Dakota Sierra Club, I do live by Pierre, SD. In fact, I live right across from the Governor's mansion. I know most people are from out of State, but I live right across the street from there. The Sierra Club is opposed to the Lake Andes-Wagner project as outlined in the preferred plan of the draft environmental statement dated February 28, 1985, for a number of reasons: One, first of all we just don't feel the project makes a lot of common sense. What we are doing in the project is taking productive farm land, adding canals, pump stations, center pivot sprinklers, drainage systems, et cetera, and spending $140 million to do it, and what we receive out of the deal is productive farmland. The project does not appear to be worthwhile. Right now the farm economy is depressed because of surplus crops, and the project will only cause more surpluses. The one way I could see that the project could be justified is because South Dakota is currently having economic problems and it needs public works projects, but there are much better public works projects that could be occurring in the State of South Dakota, including improving the drinking water of many rural communities, establishing a new agricultural processing industries, and upgrading our transportation systems. If Lake Andes-Wagner is constructed now during times of crop surpluses and we do need the project in leaner future times, the technology used now will be outdated. For example, center pivot irrigation was unheard of when the Missouri River irrigation projects were first proposed. The project costs $3,000 an acre on land that is worth between $150 to $400 an acre in terms of prices.

Senator MURKOWSKI. $150, I didn't hear that. Excuse me, please proceed.

Mr. KEOPSEL. There are also some environmental concerns that are also apparent with water quality problems in Lake Andes. The plan did not adequately address this problem, a number of problems. There could be affects or what we are interested in is knowing what affect will be caused on the water quality of Lake Andes, on the endangered bald eagle populations that use the lake for wintering, and the problems of water quality that could affect these populations. There also could be problems with such contaminants as selenium, and we really don't want Lake Andes becoming just a marsh. There are some economic concerns that were not addressed in the plan. The loss of hydroelectric power at Fort Randall Dam were not addressed in the cost/benefit analysis. Environmental costs were not adequately addressed in the cost/benefit analysis. The economic analysis was not based on approved methods.

It is obvious the Lake Andes-Wagner project is another boondoggle, which is completely unnecessary because the area is already productive farmland. The project would benefit very few people at the expense of the American taxpayer. It can be considered a

worthless and almost fraudulent use of tax dollars. By scrapping plans for the Lake Andes-Wagner project, Congress can begin showing to the American people that they are truly sincere about eliminating Government waste and pork barrel special interest projects like this.

The Sierra Club does support the farmer of South Dakota, and we feel that the farmer does deserve a fair return for his hard work and investment, but what South Dakota farmers do not need and this project provides is degredation of our water quality, insurmountable debt, lower prices because of increased production of surplus crops, and subsidies to special interests and politically connected corporations that would be the beneficiaries of this project. Thank you for coming to South Dakota and I appreciate allowing us to have a chance to speak.

[The prepared statement of Mr. Koepsel follows:]

DACOTAH CHAPTER
SIERRA CLUB
P. O. BOX 1624 PH. (605) 348-1351
RAPID CITY, SOUTH DAKOTA 57709-1624

November 1, 1985

The Sierra Club is opposed to the Lake Andes/Wagner Project as outlined in the preferred plan of the Draft Environmental Statement dated February 28, 1985 for a number of reasons:

I. It does not make common sense.

A. What we are doing in the project is taking productive farm land, adding canals, pumpstations, center pivot sprinklers, drainage systems, etc., and spending $140 million to do it, and what we receive out of the deal is productive farm land. The project just does not appear to be worthwhile.

B. The farm economy is depressed because of surplus crops, and the project will only cause more surpluses

C. There are better ways to spend public works dollars in South Dakota including improved drinking water for smaller cities and towns, establishment of new agricultural processing industries, and upgrading our transportation systems.

D. If Lake Andes/Wagner is constructed now, during times of crop surpluses, and we do need the project in leaner future times, the technology used now will be out-dated. For example, center pivot irrigation was unheard of when the Missouri River irrigation projects were first proposed.

E. The project costs $3,000 an acre on land that is worth ~~less than $1,000~~ $150.00 to $400.00 an acre. This land will not increase significantly in value if the project is built.

II. Environmental Concerns are also apparent, especially when dealing with water quality in Lake Andes. The plan does not adequately address this problem.

A. What effects will reduced water quality have on endangered bald eagle populations that use the lake?

B. Could Selenium and other contaminants found in the area make Lake Andes into the next Kesterson Marsh?

III. There are also economic concerns that were not addressed in the plan.

A. The loss of hydroelectric power at Fort Randall Dam were not addressed in the Cost/Benefit Analysis.

B. Environmental Costs were not adequately addressed in the Cost/Benefit Analysis.

C. The economic analysis was not based on approved methods.

It is obvious the Lake Andes/Wagner Project is another boon-dogle, which is completely unnessesary because the area is already productive farmland. The project would benefit very few people at the expense of the American Taxpayer. It can be considered a worthless and almost fraudulent use of tax dollars. By scrapping plans for the Lake Andes/Wagner Project, Congress can begin showing to the American people, that they are truly sincere about eliminating government waste and porkbarrel/special interest projects like this.

The Sierra Club does support the farmer of South Dakota, and we feel that the farmer does deserve a fair return for his hard work and investment, but what the South Dakota Farmers do not need and this project provides is:

A. Degradation of our water quality
B. A hundred years of insurmountable debt
C. Lower prices because of increased production of surplus crops.
D. Subsidies to special interest, politically connected corporations that will be the beneficiaries of this project.

Senator MURKOWSKI. Thank you, Mr. Koepsel. Mr. Owen Wipf, chairman of the South Dakota State Parks and Fish Society.

STATEMENT OF OWEN WIPF, CHAIRMAN, SOUTH DAKOTA STATE GAME, FISH AND PARKS COMMISSION, WAGNER, SD

Mr. WIPF. Thank you, Senator, and we do welcome you and Senator Abdnor to South Dakota. While you are here, you might be able to spend a little time maybe and get in some pheasant hunting.

I have a prepared statement, and rather than follow that statement, I would like to digress not so much from the statement, but to comment on some of the aspects as it relates to the wildlife resources. I would also like to comment as an individual who is a practicing attorney and I have lived in Wagner for some 33 years. The Department of Game, Fish and Parks was furnished a copy of this project plan, and the environmental aspect of the project, how it would affect the wildlife, fish, habitat, so on. It has been reviewed by the Department staff. They have made comment thereon. Obviously in every plan there are things to be addressed, and they were fairly well satisfied with the plan subject to some recommendations. I would say it was approved by the Department.

One of the things that we are always concerned about is habitat for our wildlife, water for our fish, so on, but we are also very positively concerned with the amount, if any, of toxic affect any project might have on our wildlife and our waterfowl population. Along that line, perhaps the Senator is aware and I am sure Senator Abdnor is aware that South Dakota was the leader in setting up

steel shot zones, doing away with the lead shot because of its adverse affect on waterfowl and any predators that would feed thereon. Senator may not know the Missouri River, particularly in the Pierre area, supports one of the largest populations of geese in the country. Along with a great many types of waterfowl, mainly mallards and pintails and that type of species. The department has studied these adverse affects of the project and felt that it was a decision problem that one of the side affects is botulism and some of the other is enteritis that we see, and so we are concerned what affect these recurrent losses would have, and the feeling with problems, we are not unaware of problems that were had in California. As you know, they had a rather large problem out there, they closed down a very large area. It is now being reopened. I understand the plan is there would be water from the river introduced into the return flow to minimize that problem. Lake Andes is one of the larger lakes in the area, and it is a principal source of recreation when we have water. It is water in the middle of the lake, it is now a large body of water and utilized by, I wouldn't even guess the number of people, but many thousands of people just this year for fishing. The return flows would dump water that could be put in to Lake Andes from this project would insure its stability and that is what it needs. An arm of that lake is Owens Bay, and that is supported by some wells, but it needs an inflow of water to guarantee the waterfowl a place that it has been for many years. It was one of the principal places that would raise ducks in this area in a dry year. We have come to the Fourth of July a few years with having a rather large body of water dry up. The ducks do depend on our stock dams, but this is not historically true that all this water not only in the farmer, not only giving the return flows, but would add the other projects and would maintain the stability of that lake. Just a few miles out of town we have a little lake called Red Lake that is principally owned by the Game, Fish and Parks, about 750 acres, and it is a game production area. South Dakota implemented the trespass law a few years ago where you cannot hunt on anyone's land without permission. South Dakotans are notoriously generous in allowing people to hunt, but the landowner does meet a point of resistance, so the State must provide for areas to hunt, and Red Lake happens to be one of those and that has been supplied by sportsmen's money to provide much of the habitat that we have in South Dakota.

That particular lake had a good body of land for the people to hunt, about 750 acres, probably 100, maybe 300 acres under water at the present time, but this is an excellent waterfowl source. Now that lake goes dry periodically, with these return flows again from this project that would be stabilized, a very advantageous situation too for recreational pursuits, also for fish and other types of wildlife, deer, pheasants, waterfowl, so on. I do want to make a couple more comments. I think that although the Sierra Club and the Audubon Society may have things to learn, I think the study made by our department should relieve their concern, maybe not totally, because maybe their direction is somewhat different than ours. We look both to the resource and to the use of that resource by the individual. I can see nothing in this project that would do anything to diminish, but only to enhance that opportunity for the people, as

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Mr. Goldhammer said, there are things beyond dollars and cents. It is the quality of life, we like it here. I know the Senator in Alaska, you like it there, that's why you are there. We like it here, we like the people, we don't want a lot of people, I don't believe. We like our space, but we like our quality of life. Our department, through the cooperation of the Corps of Engineers put on the Missouri River improvement program to open up thousands of acres of water through ramps, parking areas, campgrounds, things like that, we put in State parks, we put in fish hatcheries, all to improve the fishing, hunting, recreation pursuits of the people of South Dakota. That area, although it had the main stem dams, that doesn't provide the needs of the ma and pop, the elderly, the young that would like to go out and drop a fishing line in the water. With this project, this is a side benefit that you can't measure in dollars and cents. Quality of life, the recreation and things that we like in life, things we enjoy, being able to sit on that lake and looking at a sunset on a kind of a rippled pond is a pretty nice view. Senator, from our department we would favor the authorization, and maybe one final comment. As a practicing attorney, I also do farm tax returns and have done so for more than 30 years, it is rather depressing to watch the roller coaster cycle that our farmers put up with every few years, drying up one year, add high interest rates and lower cash-flows, and while they get $12,000 interest on an income tax return, maybe up to $30,000 interest, I shake my head and wonder how that man can survive and bet he won't. I know this project is not the total answer, and I know that those of you are like myself, but it is a start toward that economic stability that we need. You asked a question of farm values. I am also a real estate broker, and presently selling a piece of land in the area, and the prices of the land that would be suitable for irrigation would run about $295 to $425.

Just yesterday I put a package together at $375. That land probably would be the type of land that would be irrigated. Now, when Mr. Goldhammer spoke of $150 land, I don't think he meant land suitable for irrigation. That is pasture land or maybe the main land. Senator Murkowski, I thank both you and Senator Abdnor for coming, and hope you have a chance to take in a little bit of hunting while you are here.

[The prepared statement of Mr. Wipf follows:]

STATEMENT OF OWEN WIPF, CHAIRMAN, SOUTH DAKOTA STATE GAME, FISH AND PARKS COMMISSION, WAGNER, SD

S T A T E M E N T

The comments I make will relate generally to environmental issues, generally pertaining to fish, game, and recreation. Additional comments are related to economy of area and support of project.

1) Included in the project are plans for a 50 acre sub-impoundment on North Bay of Lake Francis Case. This will be a rearing pond for fish. Such ponds greatly increase the survivability of fish by permitting them to grow to a large size before release. One positive aspect of the project will be to guarantee an adequate supply of water to the pond, if runoff is insufficient. Other species, such as ducks, geese and deer will benefit from this pond.

2) Red Lake, near Ravinia, South Dakota, and in the project boundaries, would be a principal benefactor of the project. This Lake has a limited watershed area and periodically will dry out. The project would furnish water to this Lake in off peak irrigation seasons to maintain a level desired and recommended by the State Game, Fish & Parks. The Game, Fish and Parks owns or controls 750 acres of land in and around the Lake. This area is a Game Production Area and available to all persons desiring to hunt and fish. It is an excellent hatchery for ducks, pheasants and other game birds and animals. It is heavily

utilized by the public. Fishing will be a major source of recreation if water levels are maintained. Lack of public land in the area makes the production area available to the general public for hunting, fishing and general recreation. Stability of the Lake level is crucial to all aspects of this area.

3) Lake Andes, near the city of Lake Andes, South Dakota, will also be a benefactor of the project. This Lake is approximately eight miles long and one-half mile wide. Its average depth during peak years will be 7' to 8'. It has dried out several times in the last 20 years. When water levels are low, fish kill is a certainty, and waterfowl production is severely limited. The project would stabilize this Lake by having return flows enter the Lake to help maintain a level necessary for game, fish and recretion. Return flows would be diluted with irrigation water to maintain a water quality standard. Monitoring of water quality would be done by the Irrigation District and the State. Dump water can and would be used to help maintain Lake water levels. This Lake is extremely important to the general economy of the area and important so far as the production of ducks, geese, and wildlife. Recreational usage of the Lake serves an area far outside the State boundaries, encompassing parts of Nebraska, Iowa, and Minnesota. It is now and has been one of the great bass

lakes in the United States. It only can remain so with adequate water levels. Deer, turkey and other wildlife depend on this Lake for survival and growth. Many business interests would be greatly benefited by constant water levels. Resorts and cabins would return. More people using the area would stimulate business in motels, restaurants, sporting good, grocery stores and gas stations. More jobs would be available and the general economy, so dependent on agriculture, would improve.

4) Owen's Bay, 240 acres in size, is an arm of Lake Andes and a noted hatchery for waterfowl. The Bay and area around the Bay is owned and controlled by the U. S. Fish & Wildlife. Waterfowl and wildlife are heavily dependent on this Bay. Presently its water level is dependent on wells and runoff, both of which are not adequate. This Bay would also receive return flows and fresh water to maintain its necessary levels as a waterfowl production area. Monitoring of these flows would also be conducted by the Irrigation District and the State.

5) Choteau Creek, which flows through the area, has several water flows. This major creek ultimately empties into the Missouri River. Return flows to this creek is desirable and necessary to both habitat and wildlife. Dilution would at times be necessary and would be accomplished by introduction of irrigation water in off peak

seasons. A proposed ring dike would be constructed so water releases could be made during low flow months to meet State water quality standards of 2500 mg/l.

6) Loss of wetlands and habitat will be mitigated by the District purchasing 365 acres of wetland and provide a water supply. Easements will be taken on other wetlands.

7) It should be noted that State water quality standards are 2500 mg/l. River water is 504 mg/l. River water is an excellent source for irrigation. Dilution of return flows by river water will be most effective and the negative impact of return flows on fish and wildlife will be completely minimized. Therefore, return flows can be effectively utilized to maintain water levels for Lake Andes, Red Lake, Owen's Bay and Choteau Creek; all of which enhances the fish, wildlife and recreational usage of the affected areas.

8) The plan has been reviewed by the State Game, Fish & Parks staff and their assessment is included in the Statement. Very positive benefits can be derived from this project. As Chairman, I endorse the project and urge its authorization.

9) In my individual capacity as a citizen and attorney, I would comment on general matters dealing with economy. In my 33 years in the practice of law, I have prepared income tax returns as a part of my practice. Most

returns are for farmers. I have observed over the years a serious worsening condition of the farm economy. Notably, high interest rates and lower cash flows. It is not uncommon to see interest figures from $10,000 to $20,000 annually. Generally, when these figures are revealed, a net operating loss is assured. Farmers cannot survive under these conditions. Ideally, low interest and higher prices and better marketing would be the solution. Realistically, this cannot be accomplished soon enough to save many farmers. This project would be a boon and possibly a partial solution to the problem. Diversity of crops that can be grown under irrigation would aid in cash flows. Constant and regular crop production would lessen the impact of drought and allow better planning and utilization of crops. Allied industries would spring up. More jobs would be available. Business dependent on farm economy would be more stable and expand. Dependency on one or two types of crops would be eliminated, thus opening up new avenues of revenue.

In conclusion, I would strongly urge the authorization for all the reasons set out herein and oral comments made at the hearing.

Respectfully Submitted,

Owen R. Wipf

Senator MURKOWSKI. Thank you very much. May I ask for the record if you would explain specifically are you speaking as chairman of the South Dakota State Game, Fish and Parks Commission, and is that a position appointed by the Governor, sanctioned by the legislature?

Mr. WIPF. Yes. I have been in the legislature 5 years and I am presently the chairman of that commission, on that commission are four Democrats, four Republicans, four farmer-ranchers, four of which are farmer-ranchers and four of which are business or other types.

Senator MURKOWSKI. Might you advise us as to the consensus process in which you came to the conclusion? Was it 60–40, 50–50, or 100 percent, or do you just make a decision and go with it?

Mr. WIPF. Are you talking about——

Senator MURKOWSKI. I am talking about the official position of the responsible agency overseeing the fish and game habitat with regard to this issue, because this is very important when we get in to any markup, and there are questions concerning the position of the responsible agency within the State who has the oversight and responsibility, and the management for fish and game resources.

Mr. WIPF. Senator, that matter has not been brought to what we call an official vote. It would not be brought to a vote, it would be discussed around the table and at a point in time where it needed some action it would be then taken, only when its been discussed, been reviewed by our department. So, when you ask an official position, it has not been put on paper as such, no.

Senator MURKOWSKI. I am a little bit confused, and I would, for the record, it is going to remain open, but I think it is important that the State have an official position based on this Department of Fish and Game on this matter, and I assume then your testimony is unofficial pending official, is that correct?

Mr. WIPF. Yes, that is right.

Senator MURKOWSKI. I assume is it conceivable that you will be able to within the allotted time submit for the record a reference to whether or not this really represents the position of the North Dakota State Fish and Parks Commission which I assume is the appropriate agency charged by your State legislature with oversight and management of fish and game resources?

Mr. WIPF. There is a meeting of the South Dakota Game, Fish and Parks Commission that is coming Monday and Tuesday. Now, that is not our normal procedure to operate in that manner, but if the record would be enhanced, I will surely put that before the commission for their consideration as a formal approval.

Senator MURKOWSKI. It would expedite our process if as we refer back to the record in markup that it is clear that we have a statement of policy as opposed to the opportunity of an individual who would say there is no official policy or this does not represent an official policy. There was a reference made to the Kesterson issue which is before our subcommittee, and I want to correct the record. The decision in regard to the Kesterson is not as was stated to shut down a 500,000-acre project, but to rather cut off delivery of the selenium-bearing water from the project. The project is very much still producing, and it is receiving water, but the selenium-bearing water is no longer going into the project. I am a little concerned

about a consistency matter, and I would address this to either member of the environmental community who has given testimony here. That is the apparent conflict between the issue of fish and game habitat, and the reality that evidently occasionally out of every 10-year period the water level of the lake is so low that the fish and game in affect are reduced because of the inadequacy of the water supplies. Isn't there an inconsistency there in the interest of you can't have both. It would appear to me that if you don't have water, why you are going to lose fish and game from time to time. If you do have water, you are going to enhance fish and game.

Mr. CHAPPELLE. I guess the best way to explain our position on that is that the fluctuation of lake levels in the northern plains is a normal cyclical, natural phenomenon. It occurs. The wildlife populations and the fish populations that exist in these bodies of water or adjacent to these bodies of water have evolved, you know, over thousands of years, and are comfortable with this. The environmental stresses it puts on them.

Senator MURKOWSKI. So, as a consequence of the human factor utilization which wasn't in the natural progression, isn't it conceivable that we can help the process of the resource management of the fish and game by providing more water? Isn't that a responsible thing to do?

Mr. CHAPPELLE. The question is what quality of water are you going to put there and how are you going to manage the water, and how are you going to control it? Even if you establish a plan at this time, you know, Congress made some great laws, an agency can just ignore the law and if somebody doesn't take them to court and make a big issue out of it, a commitment that was made in the past, you can talk to farmers and ranchers who lost land along the Missouri River here, promises made or promises they perceived were made to them, they consider broken. There is no place in the law where they can go back and enforce those promises. So, our feeling on what has come out of here as far as a wildlife indication effort is that the sponsors of the project as well as the responsible agencies have come up with a mitigation plan that over all addresses the situation. Our concern is that when you establish an extensively managed system that provides the mitigation, you are creating a very fragile structure that can be broken apart whenever the dollars for doing this type of management get tight. We would prefer to see an acre-for-acre, value-for-value placement.

Senator MURKOWSKI. The environmental impact study, the process of that on this project, I assume you have both had an opportunity to review?

Mr. CHAPPELLE. We have seen it from time to time.

Senator MURKOWSKI. You think it needs further study?

Mr. CHAPPELLE. I think the issues we raised need further study, specially the ones of water quality.

Senator MURKOWSKI. How long has it been available?

Mr. CHAPPELLE. I think I received a copy of it a couple of months ago.

Senator MURKOWSKI. What do you think is a reasonable timeframe to study it and make some decisions?

Mr. CHAPPELLE. Well, you know, quite frankly, the situation with selenium worries me. I was an employee for——

Senator MURKOWSKI. We are all concerned about selenium, nobody wants it, but the realities are you have an environmental impact statement, it has to be evaluated, people have to take a stand on it, but to suggest it goes on and on and on, and we study and study and study it, that is what I am concerned.

Mr. CHAPPELLE. If the studies that are conducted in the first place are comprehensive studies and address the question, then, you know, you don't need to study it forever.

Senator MURKOWSKI. My question to you, sir, is, Do you feel they have addressed the questions?

Mr. CHAPPELLE. Not adequately enough. I don't feel there's been an adequate impact on the waterfowl.

Senator MURKOWSKI. Is this based on a scientific study of the situation?

Mr. CHAPPELLE. It is based on the review of it.

Senator MURKOWSKI. And your qualifications?

Mr. CHAPPELLE. I worked for the California Department of Water Resources, I work for the South Dakota Department of Water Resources.

Senator MURKOWSKI. Your current?

Mr. CHAPPELLE. I have also worked for the East Dakota Conservancy District, and I also worked for the State of South Dakota Department of Environmental Protection and the Department of Natural Resources Development.

Senator MURKOWSKI. You are currently with whom?

Mr. CHAPPELLE. I currently work in the field of insurance.

Senator MURKOWSKI. I see. So you have no environmental connection along with your livelihood currently?

Mr. CHAPPELLE. No; I guess I would like to say that as environmental organizations we come to these hearings and testify because of our concerns, we are not here to nitpick over a decimal point or something of that nature. We are here to talk about the concerns we have about the quality of the life that we view, sir.

Senator MURKOWSKI. I understand, and I attend and participate in many of these hearings, but one of the frustrating things I think that we all would agree on that more often than not, the difficulty in making decisions is based on the facts that in many cases we don't have a scientific information to make intelligent decisions. As a consequence, decisions sometimes are put off, or not made at all, and I think we have a responsibility to get the very best scientific capabilities on any given project, and then to make the decisions accordingly. That is why I was particularly interested in the question of the environmental impact study, and your particular evaluation, and you have indicated that you have an environmental background, but I assume not qualified as a water scientist?

Mr. CHAPPELLE. No; I would say I have above average background.

Senator MURKOWSKI. I think it would be very, very helpful if your organization, which obviously does have the capability to evaluate the scientific information, would care to submit an opinion on this based on scientific evaluation. Mr. Koepsel, you indicated something about another boondoggle, doonboggle, boondoggle,

that is close enough for Government work today. Have you testified for any project?

Mr. KOEPSEL. Yes; I have testified for a number of different things. I have testified recently in North Dakota for additions to the wilderness preserve system up there.

Senator MURKOWSKI. I am talking about any development projects?

Mr. KOEPSEL. I have testified very rarely, actually. This is my fifth or sixth time.

Senator MURKOWSKI. I hear so often the Sierra Club's position against any development project, and I have never heard on one occasion the Sierra Club in support of a development project which I think represents a lack of responsibility in one sense, because while obviously we all have the right and obligation to voice our opinions based on our particular commitments, we also have the responsibility to address alternatives or the reality that if you can't have it one way, why there is the other point of view too, and I would certainly urge as I have in the past that representatives, particularly from the Sierra Club, that they do have a responsible obligation to address some of the alternatives, and I am still looking for my first Sierra Club witness on a development project to testify in favor of it. Do you have any questions, Senator Abdnor?

Mr. KOEPSEL. Can I give a response to your remarks?

Senator MURKOWSKI. Yes.

Mr. KOEPSEL. The Sierra Club is interested in the environmental impact of the project. Whether we should be suffering these environmental impacts.

Senator MURKOWSKI. Have you evaluated personally or studied?

Mr. KOEPSEL. Yes.

Senator MURKOWSKI. What is your qualification?

Mr. KOEPSEL. I have a masters degree in natural resource management. I work for the Corps of Engineers in the natural resource office.

Senator MURKOWSKI. The environmental statement you think is flawed?

Mr. KOEPSEL. I think it is very inadequate. I have seen environmental impact statements. This is a very small size statement, not going in to——

Senator MURKOWSKI. Size?

Mr. KOEPSEL. The size.

Senator MURKOWSKI. I don't know what size has anything to do with quality.

Mr. KOEPSEL. The size doesn't have anything to do with quality, but from size you can get an idea of what information is provided to a person and it is very, I thought it had very broad generalizations within it.

Senator MURKOWSKI. We would appreciate it if the Sierra Club would care to address the matter of the environmental impact statement objections or support, either one, based on a scientific analysis from people who are obviously qualified to make that address. Senator?

Senator ABDNOR. I think, I don't profess to be any kind of an expert, I assume and have never heard too many complaints about those that do make those environmental statements, many times I

have the same rule that statements not be accepted at all, and so I don't think they just do it without facts and some expertise. I appreciate those that have expertise and don't agree, but I do think we ought to have definite proof, something to look at. Do you see any Bureau of Reclamation projects for South Dakota in the future that would be acceptable to you people? Do you think all projects in South Dakota shouldn't be?

Mr. KOEPSEL. I think, I cannot see a reason to use the irrigation projects east of the Missouri River, because this is already productive farm land. Why should we have irrigation projects in that area? In fact, the original intent of the Pick-Sloan program was to go in the west river areas where farmland, where farming was not possible. The soils, the topography in that area were not conducive to irrigation, so they switched the projects over in the east river area, and it does not make sense. Take productive farm land, spend millions of dollars of taxpayers money so that the final result would be productive farmland, it just does not make sense to me. I think it is a very commonsense argument, opposed to the type of Government spending.

Senator ABDNOR. I have lived out here all my life, and I have seen times when Wagner and Lake Andes would have welcomed some rain. It is not all that great. We have the most productive land in the United States when we get rain and this year is a good example. I have seen a lot of land that isn't. Go up to Miller this year, that is east of the river, I had to go help those people out, they had feed problems and all, and that happens very regularly, and that is one of the things I appreciated so much is the fact that maybe we could do something to stabilize. It breaks my heart to have to see people have to ship cattle all the way to Nebraska or get them all together, I am trying to get some legislation changed in the farm bill so I can give these ranchers a break for some feed this winter so they can try to hold their foundation herd together. I assure you the feed they have put together is coming out of the Belle Fourche project, they raised some of the feed up there, and alfalfa. That is a major concern, because we only have agriculture in this State, we would like to have a lot of other industry to help out there. Maybe it would be helpful, but I am not exactly a big spender down there, let me tell you something. I have the chairmanship of the other water committee, the Public Works and Environment, and I can tell you that the amount of money being spent for water projects is nil compared to what it was a few years ago. No one is going to put a lot of money into those projects, it is just that I hate to see South Dakota lose out every time. We get one authorized, I have got somewhat of a chance to help out, because I am on the Appropriations Committee, the Subcommittee on Water and Energy, we are not going to put more money in, we just hope to get our share of a little bit of it, the little bit that is in the budget is going to get spent probably in Arizona for reclamation on the projects that are going. We want to sit by and let everybody else take a little that is there. I would like to make a fight out of it and get some for South Dakota. If it is bad, I don't know, I don't profess to know whether these projects are that bad. Maybe you have a point, I think you have to prove that. Everything I read about it looks very encouraging. I think there was $900,000 these

people were willing to put out a bond issue on to find out themselves. It is not like they are coming out of the dark, they have a pretty good basis for this. Just to come in and oppose everything and not have the figures and facts isn't good, because I think South Dakota has got to do it, and today this is the way we do it. Thank you.

Mr. CHAPPELLE. We are here just to express our concerns. I think they are valid concerns of many South Dakotans by virtue of the fact that the sponsors of this project took such a serious look at wildlife mitigation, environmental factors that they did. It shows it is a common concern of most South Dakotans. The Governor's statement obviously indicates that he doesn't share an open door with the environmental organizations in the State of South Dakota. I would like to say that even though we have disagreed on particular issues in the past, Senator, we appreciate the fact that your door has been open and hope that it will continue to be open to the people of South Dakota that have these concerns.

Senator ABDNOR. I assure you it is, but I was just trying to put some facts to go along with the concerns. I mean we can't leave it up in the air all the time. I think the decisionmaking needs to be made for the good of South Dakota eventually.

Senator MURKOWSKI. Thank you, Senator, and thank you Mr. Chappelle and Mr. Koepsel, and Mr. Wipf, particularly I want to thank you, and we will look forward to a determination of just what the official position is on the board. The indication of Mr. Chappelle and Koepsel I think it important that you understand why I want an official position for the record of the department of fish and game, or whatever it is, because I feel that particular department has the responsibility and with that responsibility goes the necessity of having the fish and game people that have had the scientific training and are prepared to, based on their evaluation, make recommendations based on again on their professional expertise, and I think it is important as we address these issues that we do have not only some emotion, but certainly a major environmental impact one way or another. It would seem to me on this particular issue that you can't win both ways. You either have an ensured supply of water and the availability of the habitat that goes with it, or you have the other alternative which is what you have now, the exposure of drought and the consequences of that. We would appreciate having your statements when you have the opportunity. I wish you good day. We will move on to panel 4. John Loucks, president, Upper Missouri Water Users Association; Mr. Lyle Laberee, chairman of the Central Charles Mix County Development Association; Mr. Albert Soukup, chairman, Charles Mix County Commissioners, Wagner; Mr. Edgar Magera, South Dakota Water Congress. We look forward to your testimony, gentlemen. In the interest of time, I would ask that those of you who are so inclined to summarize your statement, your entire statement will be entered into the record as read. I will keep time on your statements, please proceed, gentlemen, in any manner in which you so desire.

STATEMENT OF LYLE LABEREE, CHAIRMAN, CENTRAL CHARLES MIX COUNTY DEVELOPMENT ASSOCIATION, LAKE ANDES, SD

Mr. LABEREE. My name is Lyle Laberee. Before I get in to my testimony, I would like to comment somewhat on the last panel and your questions regarding the environmental impact statement. I happen to be a consultant to the Lake Andes Irrigation District, and I went with the personnel from the Fish and Wildlife Service and the Game, Fish and Parks where they conducted a random sample to evaluate the cover and wildlife cover on the project, so I am a little bit disturbed when I say that people say that that hasn't been adequately considered, because I feel it has.

Now, I will proceed with my comments for the Central Charles Mix Development Association. The Central Charles Mix Development Association requests that this committee take positive action recommending authorization of the Lake Andes-Wagner unit.

The Central Charles Mix Development Association was recently formed with its overall goal of improving the business climate of the cities of Wagner and Lake Andes. We hope to provide more jobs by creating small industries and additional business.

For too many years we have seen the number of farms decrease, and with every 10 farms we lose, we also lose 1 business. If we are going to keep our families on the farm, we must provide additional job opportunities. We see the Lake Andes-Wagner unit as a project that will provide more job opportunities and feel that it will help maintain the number of small family farm operations.

We respectfully request that this committee encourage the U.S. Congress to authorize this project.

The people of this area need this opportunity to develop the Lake Andes-Wagner project to make this area a better place to live, work, and play. I feel that the people that are included in this study should be given the opportunity to vote on the repayment contract and they can not do that without authorization. I would also like to comment that we recently, and there is some young children around have heard some strange noises lately because there is a train happens to be going up and down the track again, I am not a betting man, but I am willing to bet anybody in this room that if we get a year like we had in 1976 and 1977, we will not see that train running any more. Thank you.

[The prepared statement of Mr. Laberee follows:]

STATEMENT OF LYLE LABEREE, CHAIRMAN, CENTRAL CHARLES MIX COUNTY DEVELOPMENT ASSOCIATION, LAKE ANDES, SD

Honorable Frank Murkowski, chairman, and members of the subcommittee:

Thank You for coming to South Dakota and providing us with an opportunity to testify.

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We see the Lake Andes-Wagner Unit as a project that will provide more job opportunities and feel that it will help maintain the number of small family farm operations.

We respectfully request that this committee encourage the U.S. Congress to authorize this project.

The people of this area need this opportunity to develop the Lake Andes-Wagner project to make this area a better place to live, work and play.

Senator MURKOWSKI. Thank you very much, Mr. Laberee. Mr. Loucks.

STATEMENT OF JOHN LOUCKS, PRESIDENT, UPPER MISSOURI WATER USERS ASSOCIATION, RAPID CITY, SD

Mr. LOUCKS. My name is John Loucks, president of the Upper Missouri Water Users Association. As president, I certainly want to welcome you, Senator Murkowski and Senator Abdnor. Thank you for including this statement in the part of the hearing.

Senator MURKOWSKI. It will be entered in the record as if read.

Mr. LOUCKS. On the Lake Andes-Wagner Irrigation Project authorization. Having served for many years as a director and past president-elect of the National Water Resources Association, I can fully appreciate the fact that each and every water use proposal on the Missouri River in our area merits your most sincere review.

I personally would like to refresh the memories of the committee regarding the Pick-Sloan Act, as well as comment on the water development needs of South Dakota.

The 78th Congress of the United States undertook the task of taming the Missouri River. The Flood Control Act of 1944 endorsed a plan to provide the States within the Missouri River Basin those means necessary to provide beneficial use of this river resource. To the downstream States this meant the negation of the fear of yearly spring floods with the accompanying devastation of personal property and inundation of fertile riverbottom lands. It means hydropower production within the basin at a reduced rate for the preference customer. It meant the establishment of riverside industry and control of the Missouri River which supports navigational transportation used to move many of these products. In general, downstream development has become a byproduct of the Flood Control Act.

Meanwhile, while the downstream States were benefiting, what has the program accomplished for the upstream States and in particular South Dakota. South Dakota has to date received a permanent flood on 536,875 acres of fertile riverbottom lands. Included in this acreage were the farms, ranches and in some cases, the communities of South Dakotans, a people dedicated to the concepts which made America the great country she is. A people willing to sacrifice their homes to protect the life and lands of their neighbors to the south. A people unselfish enough to forgo their own needs to protect their fellow Americans from the devastation of flooding such as those experienced in the early forties.

People trusting enough to believe that the Federal Government would not forsake them. South Dakotans should not have to wait any longer for the promises to be fulfilled. The droughts of 1976, and again in 1980, have crippled the agriculture within our State.

In contrast to the national average of 3 percent, over 20 percent of South Dakota's income is contributed by farming and ranching.

Drought has a disastrous effect on South Dakota. In 1976 and 1980, the Farmers Home Administration estimated losses in the State at $1,600 million respectively. We are aware that drought is a way of life in South Dakota. We are also aware that the promises of the Flood Control Act can do for South Dakota what it did for our downstream neighbors. South Dakotans want the chance to operate without fearing the wrath of nature, to prosper as our neighbors to the south have prospered. But most of all, South Dakotans want the promises of the Federal Government fulfilled.

South Dakota has one of the lowest per capita incomes in the country. South Dakota has the highest economic dependency on agriculture of any of the 50 States. The relationship between per capita income, ag income, and rainfall can be directly correlated. South Dakota is totally underdeveloped in terms of Missouri River water in general and irrigation specifically.

Its not just national inflation that keeps a State like South Dakota on the margin of bankruptcy. South Dakota is drought prone, and each brought triggers an economic tailspin that costs not just us, but taxpayers nationwide.

South Dakota's crop acreage is 3-percent irrigated. South Dakota could double its irrigation or stop altogether and it would have no impact on national grain surpluses. Likewise, a stable feed base for livestock produced is a higher priority than production of cash grain. South Dakota cattlemen raise 1.5 million calves each year, but 1 million of them are finished to market weight out of State. In times of feed shortage, it is estimated that it would take the production of another 400,000 irrigated acres to feed all the calves in South Dakota, if the livestock industry determined it was profitable to do so.

The 85,000 acres irrigated privately along the Missouri River now have shown an eightfold to tenfold increase in gross dollar returns compared to the nonirrigated acres.

The State of South Dakota and the local sponsor of the Lake Andes-Wagner project have expended approximately $1.5 million toward development of the irrigation project. These funds were used toward the completion of a master plan and a final feasibility report. This clearly demonstrates that the people of South Dakota have established water project priorities. The local people have demonstrated a commitment to pursuing the completion of the project. All we need is the Federal commitment and the Missouri Basin Program will begin to function for South Dakota as planned.

Some observations I made recently, particularly in Charles Mix County. This county depends heavily on agriculture. The irrigation development will provide an adequate and timely moisture supply which in turn will stabilize an increase in production. This will be welcome to Charles Mix County which has the lowest per capita income. Job opportunities are particularly needed by the Yankton Sioux Tribal members which constitutes about 17½ percent of the county, and have an unemployment rate of about 78 percent. The project will provide about 440 on site jobs during peak construction which will generate another 390 jobs in the area. Agriculture employment will increase by approximately 110 positions after the

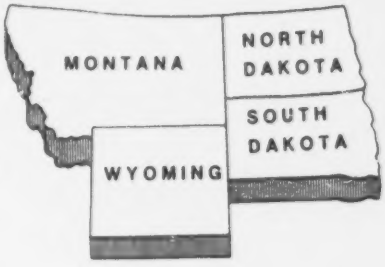
project is flowing, this will generate another 240 jobs. Agriculture is important, not only to Charles Mix County, but to South Dakota, and to the Nation as a whole. It is important to everyone.

In closing, I would add that I believe it is time for the citizens of South Dakota to receive the benefits promised 40 years ago. I urge this committee to honor the promises made and the effort of those people dedicated to water development by acting favorably in your review of the Lake Andes-Wagner project. Thank you.

[The prepared statement of Mr. Loucks follows:]

STATEMENT OF JOHN LOUCKS, PRESIDENT, UPPER MISSOURI WATER USERS ASSOCIATION, RAPID CITY, SD

Upper Missouri
WATER USERS ASSOCIATION
1104 Westwood Dr., Pierre, SD 57501
Our Greatest Resource WATER Use It Wisely
Delvin D. Brosz, PE, Sec.-Treas.



As President of the Upper Missouri Water Users Association comprised of water users in Montana, North Dakota, South Dakota and Wyoming, I thank you for including this statement as a matter of record in your hearings on - The Lake Andes-Wagner Irrigation Project Authorization. Having served for many years as a Director and Past President-Elect of the National Water Resources Association, I can fully appreciate the fact that each and every water use proposal on the Missouri River in our area merits your most sincere review.

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Drought has a disastrous effect on South Dakota. In 1976 and 1980, the Farmer's Home Administration estimated losses in the state at 1 billion and 600 million, respectively. We are aware that drought is a way of life in South Dakota. We are also aware that the promises of the Flood Control Act can do for South Dakota what it did for our downstream neighbors. South Dakotans

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In closing, I would add that I believe it is time for the citizens of South Dakota to receive the benefits promised 40 years ago. I urge this committee to honor the promises made and the effort of those people dedicated to water development by acting favorably in your review of the Lake Andes-Wagner Project.

Senator MURKOWSKI. Thank you, Mr. Louck. Next witness?

STATEMENT OF ALBERT SOUKUP, CHAIRMAN, CHARLES MIX COUNTY COMMISSIONERS, WAGNER, SD

Mr. SOUKUP. Senator Murkowski, Senator Abdnor, my name is Albert Soukup, I am chairman of the Charles Mix County Commission. We would like to have congressional authorization and finishing of the Lake Andes-Wagner irrigation project.

This is a semiarid area, we have frequent periods of drought during the growing season. The application of water to the growing crops would make a great difference regarding the profitability of agriculture here. Not only in the production of the common crops of corn, milo, soybeans, sunflowers, wheat, and oats being raised here now, but also food crops such as sweetcorn, potatoes, edible beans, and other food crops.

It would not only help agriculture, but just as great would be the benefits of the towns and cities in the whole area. This project would bring new industry to the several county area such as the processing of food and livestock feed. Also may bring other industry to this general area, thus employing more people.

Charles Mix County has more cattle numbers than any county in the State. The Lake Andes-Wagner irrigation project would assure an abundant supply of feed for all livestock which would help in stabilizing this industry.

We have an abundant supply of both water and power here, and I believe we should make it economically possible to use it. We believe this project would do this.

We sincerely ask this committee as well as the whole U.S. Congress to approve the authorization of the Lake Andes-Wagner irrigation project, as well as funding of it as soon as possible. We

really believe this would greatly help the overall economy in the several county area, but the State of South Dakota as a whole.

[The prepared statement of Mr. Soukup follows:]

STATEMENT OF ALBERT SOUKUP, CHAIRMAN, CHARLES MIX COUNTY COMMISSIONERS, WAGNER, SD

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We really believe this would greatly help the over all economy in the several county area, but the State of South Dakota as a whole.

Senator MURKOWSKI. Thank you very much for that concise statement, Mr. Soukup. Our next witness go ahead.

STATEMENT OF EDGAR J. MAGERA, ON BEHALF OF THE SOUTH DAKOTA WATER CONGRESS, PIERRE, SD

Mr. MAGERA. My name is Edgar Magera, I live in Tripp, SD, and I represent today the South Dakota Water Congress statement of support. Welcome to our part of South Dakota, Senator Murkowski and Senator Abdnor. We appreciate the opportunity to testify on an issue that is important to the State of South Dakota and is essential to those of this immediate area. The South Dakota Water Congress is a broad based citizen organization in South Dakota which supports and promotes the responsible use of water resources. We are the South Dakota affiliate of the National Water Resources Association. The South Dakota Water Congress first endorsed the Lake Andes-Wagner project in July 1982. We did so because of the strong local support shown in the organization, and promotion of the project, and because we felt it would be a benefit to this area.

South Dakota is probably more dependent upon agriculture than any other State. It is a proven fact that you can directly relate South Dakota rainfall, farm income and State per capita income. Mother nature is inconsistently or I should say consistently unfair in South Dakota. We get too much rainfall at the wrong times, and too little when we really need it. As a result, our farmers aren't able to do any long range planning. The best farming plans can be laid, but without rainfall we have no production. Irrigation can help to stabilize farm income and when our farm income is stabilized, so is the economy of the rest of the State. Drought is a silent

task, we are willing to pay tax dollars for drought relief programs, why don't we turn the table on drought by putting the money up front for the financing of worthwhile water projects to help avert the problem of disaster. The surplus issue has arisen in the past when discussing the pros and cons of irrigation. Among other things, the issue of the surplus was used in opposition of the development and the use of the tractor in the early 1900's. Back then they said a tractor would grossly inflate the surplus we already had. Then came the wars and the food lines in America. The opponents to the tractor weren't planning for the future. A United Nation's report on population and environment in May of this year says that the world food output must increase by 60 percent in the next 15 years to keep up with demands and needs. We must look to the future. So in closing, I would urge the support, encourage the support of the Lake Andes-Wagner water project, because the water project is a part of all of our futures. We support it because of the ravaging affects drought has had on our State and on our country's coffers, and finally we support it because it begins to fulfill the promises of the Pick-Sloan act. Thank you very much.

[The prepared statement of Mr. Magera follows:]

South Dakota
Water Congress

PO Box 536 • Pierre, SD 57501 • (605) 224-7945
Gay Tollefson • Executive Director

STATEMENT BY THE SOUTH DAKOTA WATER CONGRESS FOR PUBLIC HEARING CONDUCTED BY THE HONORABLE FRANK H. MURKOWSKI, CHAIRMAN OF THE SENATE SUB-COMMITTEE ON WATER AND POWER - NOVEMBER 2nd, 1985, WAGNER, SOUTH DAKOTA

Mr. Chairman and members of the committee. We appreciate this opportunity to testify on an issue that is important to the State of South Dakota and essential to the people in this immediate area.

The South Dakota Water Congress is a broad-based citizens organization in South Dakota which supports and promotes the responsible use of water resources. We are the South Dakota affiliate of the National Water Resources Association.

The South Dakota Water Congress first endorsed the Lake Andes/Wagner project in July of 1982. We did so because of the strong local support shown in the organization and promotion of the project and because we felt it would be a benefit to the area.

South Dakota is probably more dependent upon agriculture than any other state. It's a proven fact that you can directly relate South Dakota rainfall, farm income and state per capita income.

Mother nature is consistently unfair in South Dakota. We get too much rainfall at the wrong times and too little when we really need it. As a result, our farmers aren't able to do any long range planning. The best farming plans can be laid, but without rainfall, we have no production. Irrigation can help to stabilize farm income and when our farm income is stabilized, so is the economy of the rest of the state.

Drought is a silent tax. We are willing to pay tax dollars for drought relief programs. Why not turn the table on drought by putting the money up front for the financing of worthwhile water projects to help avert the problems of disaster.

The surplus issue has arisen in the past when discussing the pros and cons of irrigation. Among other things, the issue of the surplus was used in opposition to the development and use of the tractor in the early 1900's. Back then, they said the tractor would grossly inflate the surplus we already had. Then came the wars and the food lines in America. The opponents to the tractor weren't planning for the future.

A United Nations report on population and environment, in May of this year, said that world food output must increase by 60 percent in the next 15 years to keep up with demand and needs. We must look to the future.

We encourage support of the Lake Andes/Wagner project because the project is part of our future. We support it because of the ravaging effects drought has on our state and on our country's coffers and finally we support it because it begins to fulfill the promises of the Pick-Sloan Act.

Senator MURKOWSKI. Do you have any questions, Senator?

Senator ABDNOR. No.

Senator MURKOWSKI. Thank you, gentlemen. I am going to call the remaining witnesses. Mr. Ray Duncanson; Mr. Dan Svatos, Lake Andes, SD; Mr. John Uecker, Wagner, SD; Mr. Charles Eitemiller, Armour, SD; Mr. Richard Kuca, Wagner, SD. I believe that concludes all the formal witnesses on the witness list, although my colleagues may have some others who want to.

Senator ABDNOR. I know we have to complete.

Senator MURKOWSKI. I would let you take your witnesses if you have any.

Senator ABDNOR. There is a number that have come and wanted to testify. That would be impossible, but if a couple of them wanted to represent the group here, we can probably work it in and speak for the group. I have talked with them and they will work it out.

Senator MURKOWSKI. You may proceed, Mr. Duncanson.

STATEMENT OF JOE ENGELMEYER, CHAIRMAN, PLANNING AND DEVELOPMENT DISTRICT III, AS PRESENTED BY RAY DUNCANSON

Mr. DUNCANSON. I am Ray Duncanson from Wagner, I serve on the planning district three committee. Our chairman, Joe Engelmeyer from Burke was unable to be here today and asked that I read his testimony prepared for this subcommittee.

The Lake Andes-Wagner irrigation project is located in the south central portion of the district three service area. The project, when fully implemented, would provide an economic boost to small rural communities both in Charles Mix County and the surrounding area. The project would provide additional job opportunities and act as a stabilizing force for the local agricultural related business.

District Three, a voluntary multicounty organization, is a supporter of community and economic development efforts. We have seen many changes in the past few years that have negatively affected the future of our communities. Out migration in Charles

Mix County, specially among the younger working-class age groups, has been significantly higher than the State average. Job opportunities need to be found to keep these people in the area and to return the communities to the competitive business climate they enjoyed 30 years ago.

Several factors have seriously affected the county's growth and development. Some of these points were emphasized in testimony I presented to your subcommittee in 1984. I would like to restate these points.

First, the population of Charles Mix County in 1930 was 16,703. By 1980, the population was 9,680 people. The economic impact of losing 42 percent of a county's population in 50 years is devastating to say the least.

Second, from 1975 to 1982, the number of farm owners decreased by over 7 percent. Farm workers decreased by almost 34 percent.

Third, from 1978 to 1982, farm income in Charles Mix County decreased by over 22 percent.

Fourth, the Charles Mix County median family income of $11,812 is 26 percent lower than the State figure and almost 40 percent lower than the national income figure.

Fifth, 50.2 percent of the families in Charles Mix County are classified as either low or moderate income. A total of 28.8 percent are classified as being below the poverty level.

Six, 20.5 percent of the population is 60 years of age or older.

What I have just pictured for you is a declining economy and a quality of life in Charles Mix County. I wish I could tell you that this was an isolated circumstance, but it is not. Every county in the district three service area can show the same type of economic decline.

The Lake Andes-Wagner irrigation project represents a glimmer of hope for our area and for our State. The planning and environmental impact statement prepared for this project suggests that between $13 and $14 million of additional farm income could be produced each year from this project. That additional onfarm income would create new opportunities for our rural residents. We need those opportunities if rural South Dakota is to survive as a good and decent place to live and work. Thank you for the opportunity to comment on this project.

[The prepared statement of Mr. Engelmeyer follows:]

Statement of Joe Engelmeyer, Chairman, Planning and Development District III

MR. CHAIRMAN AND MEMBERS OF THE SENATE WATER AND POWER SUBCOMMITTEE, MY NAME IS JOE ENGELMEYER. I AM A FARMER AND CATTLE-FEEDER FROM BURKE, SOUTH DAKOTA. I CURRENTLY SERVE AS CHAIRMAN OF THE GREGORY COUNTY COMMISSION AND OF THE PLANNING AND DEVELOPMENT DISTRICT III COMMITTEE. IT IS IN MY POSITION AS CHAIRMAN OF DISTRICT III THAT I SUBMIT THIS TESTIMONY.

THE LAKE ANDES/WAGNER IRRIGATION PROJECT IS LOCATED IN THE SOUTH-CENTRAL PORTION OF THE DISTRICT III SERVICE AREA. THE PROJECT, WHEN FULLY IMPLEMENTED, WOULD PROVIDE AN ECONOMIC BOAST TO SMALL RURAL COMMUNITIES BOTH IN CHARLES MIX COUNTY AND THE SURROUNDING AREA. THE PROJECT WOULD PROVIDE ADDITIONAL JOB OPPORTUNITIES AND ACT AS A STABILIZING FORCE FOR THE LOCAL AGRICULTURAL-RELATED BUSINESS.

DISTRICT III, A VOLUNTARY MULTI-COUNTY ORGANIZATION, IS A SUPPORTER OF COMMUNITY AND ECONOMIC DEVELOPMENT EFFORTS. WE HAVE SEEN MANY CHANGES IN THE PAST FEW YEARS THAT HAVE NEGATIVELY AFFECTED THE FUTURE OF OUR COMMUNITIES. OUTMIGRATION IN CHARLES MIX COUNTY, ESPECIALLY AMONG THE YOUNGER WORKING-CLASS AGE GROUPS, HAS BEEN SIGNIFICANTLY HIGHER THAN THE STATE AVERAGE. JOB OPPORTUNITIES NEED TO BE FOUND TO KEEP THESE PEOPLE IN THE AREA AND TO RETURN THE COMMUNITIES TO THE COMPETITIVE BUSINESS CLIMATE THEY ENJOYED 30 YEARS AGO.

SEVERAL FACTORS HAVE SERIOUSLY AFFECTED THE COUNTY'S GROWTH AND DEVELOPMENT. SOME OF THESE POINTS WERE EMPHASIZED IN TESTIMONY I PRESENTED TO YOUR SUBCOMMITTEE IN 1984. I WOULD LIKE TO RESTATE THESE POINTS.

FIRST, THE POPULATION OF CHARLES MIX COUNTY IN 1930 WAS 16,703; BY 1980, THE POPULATION WAS 9,680 PEOPLE. THE ECONOMIC IMPACT OF LOSING 42 PERCENT OF A COUNTY'S POPULATION IN 50 YEARS IS DEVASTATING TO SAY THE LEAST.

SECOND, FROM 1975 TO 1982 THE NUMBER OF FARM OWNERS DECREASED BY OVER 7 PERCENT. FARM WORKERS DECREASED BY ALMOST 34 PERCENT.

THIRD, FROM 1978 TO 1982, FARM INCOME IN CHARLES MIX COUNTY DECREASED BY OVER 22 PERCENT.

FOURTH, THE CHARLES MIX COUNTY MEDIAN FAMILY INCOME OF $11,812 IS 26 PERCENT LOWER THAN THE STATE FIGURE AND ALMOST 40 PERCENT LOWER THAN THE NATIONAL INCOME FIGURE.

FIFTH, 50.2 PERCENT OF THE FAMILIES IN CHARLES MIX COUNTY ARE CLASSIFIED AS EITHER LOW OR MODERATE INCOME. A TOTAL OF 28.8 PERCENT ARE CLASSIFIED AS BEING BELOW THE POVERTY LEVEL.

SIXTH, 20.5 PERCENT OF THE POPULATION IS 60 YEARS OF AGE OR OLDER.

WHAT I HAVE JUST PICTURED FOR YOU IS A DECLINING ECONOMY AND QUALITY OF LIFE IN CHARLES MIX COUNTY. I WISH I COULD TELL YOU THAT THIS WAS AN ISOLATED CIRCUMSTANCE; IT IS NOT. EVERY COUNTY IN THE DISTRICT III SERVICE AREA CAN SHOW THE SAME TYPE OF ECONOMIC DECLINE.

THE LAKE ANDES/WAGNER IRRIGATION PROJECT REPRESENTS A GLIMMER OF HOPE FOR OUR AREA AND FOR OUR STATE. THE PLANNING AND ENVIRONMENTAL IMPACT STATEMENT PREPARED FOR THIS PROJECT SUGGESTS THAT BETWEEN 13 AND 14 MILLION DOLLARS OF ADDITIONAL FARM INCOME COULD BE PRODUCED EACH YEAR FROM THIS PROJECT. THAT ADDITIONAL ON-FARM INCOME WOULD CREATE NEW OPPORTUNITIES FOR OUR RURAL RESIDENTS. WE NEED THOSE OPPORTUNITIES IF RURAL SOUTH DAKOTA IS TO SURVIVE AS GOOD AND DECENT PLACE TO LIVE AND WORK.

THANK YOU FOR THE OPPORTUNITY TO COMMENT ON THIS PROJECT.

Senator ABDNOR. Thank you. Mr. Svatos.

STATEMENT OF DAN SVATOS, LAKE ANDES, SD

Mr. SVATOS. Thank you for coming to South Dakota Senator Murkowski and Senator Abdnor and for having this hearing out here in Wagner. I would like to have my written testimony submitted.

Senator ABDNOR. Without objection it will be made part of the record.

Mr. SVATOS. I would like to proceed on with just a few comments. I am in favor of the Lake Andes-Wagner irrigation project and would hope that your committee would see fit to approve authorization on the project. I farm with my brother in partnership, and my wife and my children, and we have farmed all our lives, and I farmed with my granddad and my dad in years past, and we have irrigated from the river out of North Bay for some 18 years now, and have never had any problems with water quality. We also irrigate by Lake Andes out of the ground, and we do have some problems with soap which you don't have out of the river water, so therefore the quality of the water is really the thing that intrigues me about this irrigation project. Also in years past my granddad owned the land before the rivers were built down in the bottom of the North Bay, and he lost his land and had to have his farm moved up, and at that time one of the things that was promised was irrigation, cheap power, and flood control. Well, everybody got the flood control, and everybody got the power, but the irrigation hasn't been given to us as of yet, even when he went on his own some 18 years ago and developed this irrigation and this is what we presently irrigate with is this system. Some of the benefits that would go along with this project are a stabilized production year in and year out to feed our livestock. We presently feed feeder cattle in our operation, and have seen the benefits from irrigation. As far as being able to have a stable feed base and being able to feed a certain amount of steers every year instead of sending them to the feedlots in Nebraska to the south of us and also to keep our hog operation going and have enough feed to feed our hogs when they are finished. With this I would like to close and would urge support of this project. Thank you.

[The prepared statement of Mr. Svatos follows:]

STATEMENT OF DAN SVATO, LAKE ANDES, SD

My name is Dan Svatos. I am a family farmer from the Lake Andes area. My brother and I operate the farm, along with my wife and our three children.

We are presently irrigating and have seen its benefits during dry years that we have experienced. We have irrigated from the Missouri River for 18 years, which in the beginning was with our dad and granddad. Irrigation has shown us the stability of crop production needed during the dry years to feed our livestock.

I am presently the secretary for Lake Andes-Wagner Water Systems, Inc., and have worked extensively with the Bureau of Reclamation and the local people to develop a Lake Andes-Wagner Proposal for irrigating some 45,000 acres in the Lake Andes-Wagner area. All the planning that needed to be done for Congressional approval and authorization, has at this time been completed.

There are many good features of this planned irrigation project, and the benefits of the project will far outweigh the costs in the future of this area. All too often production of crops in the proposed area is very unstable, due to drought or in some cases too much moisture, causing flooding. This project would provide the water to

alleviate the drought problem of the past. The project proposal includes a couple drainage systems to prevent flooding of crops.

I am a young man and I plan to be in agriculture all my life. I support the concepts of the Lake Andes-Wagner Irrigation Project Proposal, and urge your consideration and approval of the proposal.

Senator ABDNOR. Thank you, Dan, we appreciate that.

Senator MURKOWSKI. Mr. Uecker I guess is next.

STATEMENT OF JOHN UECKER, WAGNER, SD

Mr. UECKER. Yes, sir. My name is John Uecker, I live 3½ miles northwest of Wagner with my wife and six daughters. I will submit my written testimony and make a couple more comments. I have lived on the farm all my life. One of the reasons I am here is I would like to tell you a story when I was a freshman in high school at a FFA project, Future Farmers of America, and I had a little 10-acre plot. We were supposed to keep track of absolutely everything you done on it as far as production, profit, I rented the tractors from my dad, kept track of the hours and labor, all of those costs. I lose $28.50 an acre. It was 1 year of corn, it was good, prime, productive farmland, but I had sweet clover I plowed under the 1st of May which took the early moisture. If I had rain I could raise 100 bushel an acre corn. That would have been worse yet, but I rented it to my dad for cattlefeed at $5 an acre, so it would have been over $30 an acre lost, and that is 1959. In 1976 when I was actually farming, just getting a start farming, I raised 8.9 bushel of grain sorghum out where I farm now. Now I need over 55 bushel an acre to break even, just to stay here, all costs.

What happens between 1959 and 1976 come back, or even the thirties, I will be in Alaska looking for a job, that is the truth. I ain't going to be in South Dakota, because what am I going to do? I got six kids to support. I can't wait probably 3 more years or this farm prices is going to put me there. I was always taught if you got a problem, do something about it, and this is why I am here. We have got beautiful country here when we have got water. In 1959 we spent a lot of time in church praying for rain, we have a dam over here, all kinds of water. I mean they are trying to tell us something, you have to try something, that is why I am here.

[The prepared statement of Mr. Uecker follows:]

STATEMENT OF JOHN UECKER, WAGNER, SD

My name is John Uecker. I live 3½ miles north west of Wagner, with my wife and six daughters. I have lived on the farm all my life.

In the last two hearing's, the testimony covered about everything that needed to be covered. One thing that bothered me is the concern for wildlife or lack of knowledge about wildlife in our area. The biggest enemy of wildlife in our area is drought. When I was a kid, there was an abundance of wildlife around Choteau Creek, because water was there from flowing wells. In the late 50's, we had a drought. The wildlife went because there was no water or cover. I've seen cattle die from drinking polluted water out of Choteau Creek. Everytime Lake Andes dries up, thousands of ducks and geese and other wildlife die from polluted water.

Back around 1960, the Federal Fish, Game, and Wildlife, stopped process on the first Wagner-Lake Andes project, because farmers wouldn't give up 6 miles of land along Choteau Creek. Who suffered the most? Wildlife.

Now you hear that down stream states might be against Lake Andes-Wagner project. Who benefited the most by the dams on the Missouri? Downstream States.

Greedy people can stop this project, but common sense and hard work will benefit everyone.

Senator MURKOWSKI. Thanks for the message. It was very much to the point. The next witness is Mr. Charles Eitemiller.

STATEMENT OF CHARLES EITEMILLER, ARMOUR, SD

Mr. EITEMILLER. Mr. Chairman, Mr. Abdnor, welcome to Wagner. My name is Chuck Eitemiller, I live 9 miles north of town with my wife and four children. I would like to make a point real clear here. I am on the Lake Andes-Wagner system incorporated, I am one of the fellows that did a lot of the footwork, went around and talked to the landowners and operators that are in there. Anybody that wasn't interested in irrigation is not being asked to be in it, it is strictly volunteer projects. If you want in, are interested, we studied your land, and anybody that didn't want in is not obligated. We tried to do everything humanly possible to make it a workable project in the community, and up to this point all this has been with working toward trying to get an authorization so we can get the bottom line so that all of us know what it will cost us and proceed from there. I had a written testimony here, I would like to submit that to the record.

Senator MURKOWSKI. It will be entered in the record.

Mr. EITEMILLER. With that, I would close and if there are any questions I would try to answer them.

[The prepared statement of Mr. Eitemiller follows:]

STATEMENT OF CHARLES EITEMILLER, ARMOUR, SD

I am writing this testimony, now that we have our Final Planning Report.

My name is Charles Eitemiller, actively engaged in farming. I have irrigated since 1963. I am also a member of Lake Andes-Wagner Water Systems, Inc.

Their are many good reasons for building this project. A few are it would create a large amount of employment on and off farm. It would stabilize a feed supply in the area, along with an evener income. There would be a substantial increase in the tax base. With all this, there would be an opportunity for various new business and industry.

We have complete and complied with all Environmental and Water quality concerns, in order to meet the South Dakota standards.

When the Fort Randall Dam was built, Charles Mix County gave up a large amount of fertile bottom lands. Assuming that with the Pick-Sloan Plan we would be embursed with irrigation. Until this time, we have not received any real help from the Plan. The local landowners. the State of South Dakota, the Bureau of Reclamation, and Lake Andes-Wagner Water Systems, Inc., have spent a great deal of money and time over the years.

We do have a feasible project. With a 1.06 cost benefit ratio, this puts us in a position, that makes us ready for all the commitments written in the Pick-Sloan Plan.

Senator MURKOWSKI. Thank you very much, Mr. Eitemiller. Our last witness on the panel is Mr. Kuca.

STATEMENT OF RICHARD KUCA, WAGNER, SD

Mr. KUCA. Thank you very much, Mr. Murkowski, Senator Abdnor. I am Richard Kuca, I live here in Wagner now. Have land 6 miles southeast from here. I have lived on the same farm 65 years without irrigation. I have made it OK financially. I retired when I hit 60. Our land is already good, productive farmland. This irrigation is absolutely unnecessary. The economics of the whole thing is very doubtful, and called a waste of taxpayers' money. Also right now we have an overproduction, that is one reason the bottom has fell out of the grain price right now. To me irrigation is

a luxury. It is like this, any farmer or rancher going all out for irrigation will be cutting his own throat. This project estimated to cost $160 million. According to the price of land, that is two or three times more than the land is worth. Any farmer or rancher who has that kind of money to spend on irrigation, and all the extra equipment, had better sit down, stop, look, and listen, instead go fishing and live off the interest. Farmers in Nebraska tried irrigation, now they are going down bankrupt. Right now the water level of Fort Randall is down 3 feet since Labor Day, it is expected to drop 8 feet more this winter. Water release right now is the lowest since 1967. This does sound serious. In closing, one more thing, let's get together and put this thing to a vote, let the farmer and rancher decide yes or no. Also look at all the money spent in the last 30 years on this thing and nothing to show. No wonder Uncle Sam is going, going, more, more in the red. Let's turn this thing around and let mother nature take care of us, that's the way it should of been since the very beginning. I thank you.

[The prepared statement of Mr. Kuca follows:]

Name Wagner Lake Andes
Richard Kuca Irrigation. Wagner S.D. 10-31-85
Box 322. 57380

I live in Wagner now. Have land 6 mi. S.E. From Here. Have lived on the same farm 65 yrs with out irrigation. Have made it O.K. financially. I retired when I hit 60. Our land is already good productive farm land. this irrigation is absolutely unnecessary. The exonomics of the whole thing is very doubtful, and called a waste of taxpayers money. Also right now we have an overproduction. thats one reason the bottom has fell out of the grain price right now. To me irrigation is a luxury, its like this any farmer or rancher going all out for irrigation will be cutting his own throat, this Project estimated to cost 160 million. according to the price of land that is 2 or 3 times more than the land is worth, any farmer or rancher who has that kind of money to spend on irrigation and all the extra equipment, Had better sit down, stop, look, and listen. instead go fishing and live off the interest. Farmers in Nebr. tried irrigation now they are going down Bankrupt. Right now the water level Ft. Randall is down 3 ft. since labor day, its expected to drop 8 ft more this winter. Water release right now is lowest since 1967. this does sound serious. In closing one more thing lets get together and put this thing up to a vote. let the Farmer and rancher decide Yes or no. also look all the money spent in last 30 years. on this thing and nothing to show for. no wonder Uncle Sam is going, going, more, more in the red. lets turn this thing around and let mother nature take care of us. Thats the way it should of been since the very Begining. Thank You
Richard Kuca

Senator MURKOWSKI. Thank you very much. Senator, do you have any witnesses?

Senator ABDNOR. No.

Senator MURKOWSKI. I would like to thank you gentlemen for your testimony and appreciate your summary and your entire statements will be in the record as if read. I am going to ask my colleague, Senator Abdnor who has some witnesses that we are going to accommodate, and I would ask that Senator Abdnor wind up the hearing if you are so inclined? I am going to excuse myself and I want to thank those of you who are here today who came as witnesses or bystanders to review the hearing process, and I think that you would agree, Senator, we have established I think a very worthwhile record. We have had some outstanding witnesses, of course including yourself, your Governor, a statement by Representative Daschle, and a number of other qualified people who spoke in both favor and opposed to the project, and I assure you that as subcommittee chairman we will look forward to reviewing this record, sharing it with our colleagues, and I would assure the last witnesses, particularly the last gentleman who brought up the point of voting, that that process will certainly occur in our committee, that will be the determination of whether or not this proposed legislation is forwarded to the floor of the U.S. Senate for appropriate action, or whether it dies in committee. We depend, of course, on the hearing process to make that determination, and I assure you that the debate within the committee will be a spirited one and I feel quite sure that the opponents will be represented traditionally by both members of the committee that more often than not are supportive of the environmental posture, and the environmental organizations and their national associations will be at our hearing, and obviously have qualified witnesses there to testify in support, I am sure, of the witnesses that have testified here today with regard to the environmental consequences of the project. So, that gives you a little idea of where this thing may go from here. That is why it is very important that we have the type of testimony which we have received today. If you will excuse me, Senator, I will see you a little later.

Senator ABDNOR. Thank you, Chairman Murkowski. I appreciate you letting me have the latitude to add some last minute witnesses who did not request time, but who do represent a group, and that is why we are doing this and we are happy to have you. It will be made part of the record.

Senator MURKOWSKI. This way we are sure that you have the last word.

Senator ABDNOR. I will have the last word, thank you very much. To accommodate a group we have asked several of these spokesmen in this one group, Alvin Kisely, Edward Van Gerpen, and Dan Morrow, I am very sorry we can't let everybody come in and testify. We want to give them a chance. These three will represent one group that will come forward and also Morris Winter, I don't know if it is the same subject matter, if you will come down we can complete this hearing with the next testimony. With the next panel. We certainly are not trying to keep anybody from testifying, but somewhere you have to have a format that is left open and for those that ask for time we accommodate you in groups. So, gentle-

men, we welcome you to the panel and Mr. Van Gerpen, you want to start out?

STATEMENT OF EDWARD VAN GERPEN, AVON, SD

Mr. VAN GERPEN. I am Ed Van Gerpen from Avon and for the benefit of yourself, you might not know where Avon is, that is the birthplace of George McGovern. I am a farmer over there, I farm with my two sons, I am also a State representative. I am speaking for myself as a taxpayer, but also I believe I represent a high percentage of my constituents as I visited with them. I am opposed to this project because of the cost factor. A simple division tells us that the cost in the acres comes to $3,500 an acre. Now, I don't care where the money is coming from, it is ridiculous to spend that kind of money per acre and that is really the bottom line. If Washington and you and your colleagues really want to help the South Dakota farmer and we need to spend money in South Dakota, I would like to share just a couple of things with you. In checking with the FMHA, the farm loans, this is real estate loans in the whole State of South Dakota is $17 million. Approximately one-tenth of what is projected in this proposed project to cost. The operating loans that the FMHA have in the entire State, the regular operating loans is $90 million. Just a little bit over a half. You are businessmen and I don't have to spell out for you the economic benefits that if these people had help across the whole State of South Dakota, how it would help our small businesses and the farmers who are looking to bankruptcy in the near future. The remainder of what I have to say is going to have a personal undertone to it. I was hoping that Senator Murkowski could hear this too.

Senator ABDNOR. It will be in the record when they look it over. Let me say this, we are going, I do have to put some sort of a time limit on it. I don't want to shut you off. This is officially the record, and will be reviewed by not just Mr. Murkowski, but the committee who couldn't be here.

Mr. VAN GERPEN. This is going to have somewhat of a personal undertone to it. In years past it seemed almost un-American to say "No" to something. Specially when the Government is going to do it, why say "No," but I read a few words in my newspaper a couple of weeks ago that caused me a lot of concern, and that is the word "2 trillion." This is scary to me, and hopefully we can overcome that, but it doesn't look good. Last winter as a farmer I went to several farm sales that were bankruptcy sales, and you can pretty much figure out that the bottom line was in many cases they spent too much. None productive debt. As the farmers go down, I feel that it is possible for the United States to follow in the same course if we don't really put a handle on this excessive spending. When I was in Washington last winter and we were meeting, this was on the other side of the aisle, but the statement was made by the Honorable Tip O'Neil that Congress or the Representatives and Senators respond to the people's wishes, that is the reason we are so far in debt. I am telling you today it is my wish to get out of debt, and if you have to say "No" to some of these things, I encourage you to do it. I am 47 years old, Senator, and as I look back on these years they have been great years, and I have to attribute it to three

things why these have been special. First of all, I grew up in a Christian home. Second, and I am thankful for that, I am thankful my dad was a farmer and third, but not least, is I am thankful I am an American, because it is three things that have dictated the direction of my life. I have a son who is going to be the same age as I am in 25 years, will he with pride as I can today say these three things. As a father, I am responsible for the first two. You and your colleagues are responsible for No. 3. Will he be proud of America, will America get its fiscal responsibility in order so that he can be proud of America? I am concerned about this for my sons, and all the young people. The greatest natural resource America has is its young people. I encourage you with all sincerity, stop mortgaging their future. Thank you.

Senator ABDNOR. Thank you. Dan Morrow.

Senator MURKOWSKI. Dan Morrow.

STATEMENT OF DANIEL A. MORROW, CHARLES MIX COUNTY, SD

Mr. MORROW. I am Dan Morrow, I farm in Charles Mix County. There are several farmers in my neighborhood that now irrigate partially. They have been irrigating, but lately they have partially or completely quit irrigating because they cannot buy the fuel to run their pumps. Their ground is getting hard, they are ruining their ground. So, their systems are setting. How can we get this project going? We get water to the edge of your land, how in the world do we afford to put systems on our land? Are we going to put them on there and are they going to be setting? One more comment I would like to make. Now everybody, 90 percent of the people here say what a feasible project this is. If this was a feasible project, wouldn't this room be full of farmers wanting it? Thank you.

Senator ABDNOR [presiding]. Thank you, Mr. Morrow.

At the close of the hearing today the record will be open for 2 weeks and anybody that wants to submit a written statement may do so.

STATEMENT OF ALVIN KISELY, CHARLES MIX COUNTY, SD

Mr. KISELY. My name is Alvin Kisely, I live and farm in Charles Mix County. We hear all these good things, but we don't hear one thing, price. Nobody is talking about price. We have got Government programs telling us pay the farmers not to produce not too much. Yet we are supposed to go out and break our backs to produce more, to get less, and which don't have any guarantees in the future, today or in the future on what we are going to get, and it is, doesn't make sense. Produce more and get less. And with added expense. I can't see it. I would like to know what your comments are.

Senator ABDNOR. I didn't come here to take sides, I am here to hear from a few people for the record. I am not even a member of this committee, I am a member of Public Works. I am not trying to dodge it, the only quick thing I could say there is that the stability factor is a factor. I don't know, you are going to have to weigh one against the other. I am sure that times that feed and grain has not been available for keeping foundation herds and all up in the

Miller country and right now all over the country. I have been meeting a lot of ranchers that wish they could buy some to hang on to their foundation herd. If that is enough of a factor, that has to be determined by the committee, plus the fact of the new products that are not in surplus, the possibility of processing the products. We are basically agriculture, I hope in this farm bill we can do something about the needs, but as Mr. Van Gerpen said here a minute ago, we have a lot of money spending there. So, how important is agriculture to this Nation that we should kind of maybe forget a little bit about the dollars in this case and try to keep them in existence, that is the question being debated now. I don't mind telling you that Congress was in session until 1 o'clock this morning. I wasn't, because we had this scheduled and Senator Murkowski felt very strongly about a commitment and a schedule, and there is going to be more of that over the next couple of days trying to argue a few things. I think my vote on where I am coming from has c'early showed in the budget. If you think I made any friends by wiping out 13 programs and cutting a few budgets, you are wrong. I think I made that, and will make it pretty clear during this campaign that I made some pretty tough votes. That is not the point, but I want you to know we are concerned about that down there, all of us, and this is not quite as simple, as clearcut as we thought. We had our own bill just like the Gramm-Rudman-Hollings bill you are hearing about I introduced 1 year ago. So we are concerned. I want to say this, water dollars have been cut back greatly in relation to anything else in the budget. I don't know what the—at least I can speak for the Corps of Engineers budget that I directly deal with over in the committee I chair of Public Works. So these are big issues, I won't argue, as you said, Mr. Van Gerpen. Mr. Winter, do you want to wrap it up?

STATEMENT OF MORRIS WINTER, LAKE ANDES, SD

Mr. WINTER. I am Morris Winter, Lake Andes, and I am a retired banker, and I have 183 acres of land in the proposed irrigation district. Thank you for giving me this opportunity to discuss my experience concerning the area here. I do not want to get into present farm economic situations, because my experience tells me that we go through these cycles all the time. It isn't a very good time in the cycle now, but I am one that has a little faith that when it is down and looks bad, we always seem to bounce up. I feel strongly that we will be doing this in the near future. I would like to direct my remarks to just a little bit of an experience, and I want to go back to 1962. I moved to Lake Andes and I started a bank. In 1962, our area had a lot of moisture. The lake even flowed over, we had fishing there in 1962 and 1964 that you never could believe. It is coming back now. I was just wondering now if you walked there 4 years ago, 3 years ago, you could walk across that lake. However, 1962 we did not have good moisture in our area, but we had subsoil moisture. This gave us another good crop; 1964 and 1970 we did not have good moisture. If you think that is fun, starting an institution like we did, and putting the money up there, and having a poor crop situation, this is not a good situation. I would like to say that in 1962, 1963 our records will show we had a

number of farmers feeding hogs, but by 1966, the number of our farmers raising hogs went down drastically. Why did they go down drastically? For the fact that they were unable to produce the corn to feed, and they spent of putting out the cash for buying the corn, they felt didn't warrant for them. We had a large number of them. Our hog numbers went down during that period. Now all of this, I could go on to say that after 1970 we have experienced our ups and downs on moisture. In our area they say that the average moisture is between 21 and 22 inches of moisture during the season. We have heard some testimony, yes, we get it sometimes when we don't want it, but if you will take the 10-year average or 10-year situation over the past 50 years, you will find that there are 7 years that we are below the average moisture and 3 above. Say, people, that doesn't work. This is why we are here today talking about the irrigation project. Our experience also tells us that every time we have a poor crop the prices are high, every time we have a good crop the prices are low, and this has happened all the time. Now, we could remedy this by having a stable moisture through the use of irrigation. I would like to comment that in this project that the number of landowners have been contacted, you had testimony today about those that were wanting this project, it started out with the Bureau and not that many years ago that they wanted about 20 or so odd acres of irrigation, and, what, behold now we have a 45-acre project. Those people, that increase, those people signed, they said, hey, we want in. I am saying that the enthusiasm is greater than what might be otherwise. The people had their choice and many of them declared that they wanted to be included in this. In conclusion, I would just like to say it this way, that we need this project very badly to stabilize our agriculture situation so that we will have the crops, so that we will be able to do the feeding, we have had some explanations made on that, and that we could increase our income. South Dakota is awful low on income and this is one method that we could increase it. I am not going to say that I maintain that the net will be better than what it is now due to irrigation, because we have had irrigators that irrigate from the river and from the well, and the river irrigators do much better than the well irrigators because of the quality of water, thank you.

Senator ABDNOR. Thank you, Mr. Winters. This will conclude our witnesses for today. I want to thank you all for taking the time to testify, and as the chairman said, the information will be gone over again by the committee and additional witnesses will be heard from down there. We just thought it would be best to come out to South Dakota so every one wouldn't have to come all the way to Washington to make their statements. I personally for the record want to thank Senator Murkowski for being with us today. I know he has his own business he has to take care of, like missing votes we don't like to do in the Senate, and he is willing to do it and I want him to know how much I appreciate it. That ends our hearing and thank you all very much.

[Whereupon, the hearing was adjourned.]

APPENDIX

Additional Material Submitted for the Record

1985 NOV 12 PM 1:31

STATEMENT OF

DON FAULSTICH

CENDAK WATER SUPPLY SYSTEM, INC.

ON S. 252

BEFORE THE

SUBCOMMITTEE ON WATER AND POWER RESOURCES

SENATE COMMITTEE ON ENERGY AND NATURAL RESOURCES

NOVEMBER 2, 1985

project rather than ignore the basic problem and continue after the next drought assistance.

We also share with the Lake Andes-Wagner project the frustration over how long it takes to get projects together under the rules either set by the federal government, or [illegible]

TESTIMONY

TO

U.S. SENATE WATER AND POWER SUBCOMMITTEE

FOR PROJECT AUTHORIZATION

PUBLIC HEARING

OF

LAKE ANDES-WAGNER IRRIGATION PROJECT

CHARLES MIX COUNTY, SOUTH DAKOTA

NOVEMBER 2, 1985

WAGNER SCHOOL THEATRE

8:00 AM till 12:00 Noon

Presented By:

Ken Dvorak, Chairman
Randall RC&D Council

TESTIMONY OF RANDALL RC&D
TO
U.S. SENATE WATER AND POWER SUBCOMMITTEE
WAGNER, SOUTH DAKOTA
NOVEMBER 2, 1985

The Randall Resource Conservation and Development Council would like the following comments included in the record of the Hearing of the U.S. Senate Water and Power Subcommittee for the Lake Andes-Wagner Irrigation project.

The Randall RC&D Council has had one of its objectives, since its organization in 1964, the development of irrigation projects. We have assisted five irrigation projects organize as irrigation districts under the South Dakota State laws.

We feel that irrigation will stabilize farm income and will reduce the hazard of drought. By developing irrigation we can reduce the problem of farm herds being sold down due to lack of livestock feed. Irrigation development will also provide additional employment and stabilize the business communities in our rural areas. We would like to reverse the trend of losing small businesses and farms in our rural area.

We request that the U.S. Congress authorize the Lake Andes-Wagner Irrigation project.

If there is anything that has to be done on the local level to speed up the authorization, please advise us.

Ken Dvorak

Ken Dvorak, Chairman
Randall RC&D Council
P.O. Box 247
Lake Andes, South Dakota 57356

Testimony submitted by
East River Electric Power Cooperative, Inc.
Madison, South Dakota
to
Senate Subcommittee on Water and Power
Presented by Jeffrey L. Nelson, Assistant to the General Manager
November 2, 1985

Chairman Murkowski and Members of the Committee:

My name is Jeffrey L. Nelson. I am Assistant to the General Manager of East River Electric Power Cooperative, Inc. (East River), headquartered in Madison, South Dakota and submit this statement on its behalf. East River is a rural electric transmission cooperative which furnishes wholesale electric power and transmission service to twenty-five rural electric distribution cooperatives and one municipal electric system in eastern South Dakota and western Minnesota. East River's twenty-six members serve at retail approximately 60,000 rural families. East River operates a 2500 mile transmission grid in its service area through which it distributes power purchased to meet its members' power requirements. Power is purchased from the Western Area Power Administration, which markets the hydro electric resources of the Missouri River, and from Basin Electric Power Cooperative, Bismarck, North Dakota, which produces its power principally from thermal sources in North Dakota and Wyoming. Presently, East River is one of the largest purchasers of hydro electric power from the Western Area Power Administration in the Eastern Division of the Pick-Sloan Missouri Basin Program marketing area. As such, East River and its members maintain an intense and continuous interest in policies and plans for development of natural resources and water projects.

East River strongly supports Federal authorization and funding of the Lake Andes-Wagner Project in South Dakota. Specifically, we

support development of the recommended preferred plan for development of 45,000 irrigated acres in Charles Mix County.

This support is based upon action by the members of East River, who through the democratic process which governs the operation of rural electric cooperatives, adopting at its thirty-fifth annual meeting held on September 4, 1985, a resolution addressing the need for development of irrigation in accordance with the Pick-Sloan Plan. A copy of that resolution entitled "Protection of Pick-Sloan Benefits" is attached to this statement. I request that it along with this statement become a part of the Committee's record of this hearing.

East River's principal support is based on our belief that Congress made a commitment as part of the development of the Missouri River mainstem dams. The four mainstem dams in South Dakota along with one in North Dakota and Montana were constructed to avert downstream flooding. In return the State of South Dakota and the Upper Basin in general were offered a Congressional covenant to develop irrigation as compensation for the over 1 million acres of productive land that was permanently flooded. South Dakota yielded over 500,000 acres to permanent flooding as its part of the covenant. To date, the dams have yielded magnificent results. The Corps of Engineers estimate that lower Missouri Basin states' flood control savings have amounted to $2-billion without consideration of the enormous human suffering, tragedy and loss of life that has certainly also been avoided.

South Dakota was promised 950,000 acres of Federal irrigation development. To date, 24,100 acres of that amount has been completed.

The hydro electric users of the Missouri Basin, and specifically those rural consumers served by East River who benefit from the hydro electric resources on the Missouri River, are committed to the partnership repayment requirements established by the Pick-Sloan Plan. Unlike many Federal expenditures, the Federal investment in the Lake Andes-Wagner Project will be repaid with interest within fifty years. A key part of the repayment obligation commits hydro electric users to assist in repayment beyond the irrigator's ability to pay. East River's support for this project acknowledges that commitment of meeting our part of the Pick-Sloan covenant.

There are several other important reasons, however, why this Subcommittee should recommend authorization and why the Congress should concur.

First, all of us are very aware of the almost $2-trillion national debt and the obvious need for fiscal constraint. At the same time, however, a clear distinction needs to be made between Federal dollars invested in water resource development which repays their costs and Federal investment in mass transit systems, in Federal highways or Federal funded sewer programs, most if not all of which are grants returning no direct repayment to the United States. These investments are made for the generally recognized and approved purpose of sustaining and nurturing a strong democratic society. In the urban areas of this country Federal grant dollars are essential to the current and future

economic well-being of not only urban areas but the regions in which they are situated and country as a whole. These legitimate Federal expenditures are generally justifiable even though direct repayment will not be made. On the other hand, the investment being proposed for the Lake Andes-Wagner Project to provide crop stability in a generally depressed economic area not only will improve the economy of this area, but will repay every nickel of the Federal investment, with interest. In addition to the indirect economic and societal benefits that will flow to the Federal government as in many Federal grant projects, direct repayment with interest will be made.

Second, South Dakota has not shared in the economic revival that has apparently improved the economic lot for much of the nation since the early 1980's. On the contrary, South Dakota in general and this area specifically has been ravaged by a continuing depression rivaled only by the tragedy of the Great Depression in the 1930's. The prospect for continued agricultural survival in this area is bleak without some sustaining lifeline being extended by the Federal government to help agricultural producers in this area help themselves. Certainly, the continuing low crop prices, high interest rates and poor transportation network in this area will continue to hold down economic development. However, if the uncertainty of a crop loss can be minimized by an investment in an irrigation project, and some assurance be made of a continuing crop, the prospects for at least limited economic prosperity are much improved.

Third, the Lake Andes-Wagner Project is a small project. Unlike the states of California, Arizona, Washington and others in the west

who have enjoyed literally millions of acres of Federal irrigation development, South Dakota's Lake Andes-Wagner Project of 45,000 acres is not a major commitment part on the Federal government. While arguments about crop surpluses or removing water to the detriment of downstream states will likely continue to be voiced, the facts are that the Federal development of this 45,000 acres irrigation project in this part of South Dakota will yield very large benefits for a small price. Similar benefits are already enjoyed by many states which for some time have enjoyed enormous Federal largess. We're only asking for a small slice of that economic pie.

In summary, East River supports authorization and funding of the Lake Andes-Wagner Project. We are committed to assist in the repayment as required by the Pick-Sloan Plan in order to claim a first small part of the Congressional covenant with South Dakota. This project will serve to enhance the area economic development as well as provide a secure capital investment for the United States. All the ingredients of commitment within the Federal requirements -- local support, project repayment, favorable benefit-cost ratio -- are present and await only the action of this Committee to begin the process which will bring this project to a meaningful conclusion.

Adopted by the Members of
East River Electric Power Cooperative, Inc.
at the Thirty-Fifth Annual Meeting
September 4, 1985

NEW RESOLUTION NO. 5

PROTECTION OF PICK-SLOAN BENEFITS

(We support adequate compensation for the construction of the mainstem dams in South Dakota.)

When the mainstem dams were authorized and constructed in South Dakota and the Upper Basin, Congress pledged to compensate South Dakota and the Upper Basin states for the land that was permanently flooded. South Dakota lost over 500,000 acres of productive land behind the four dams constructed in South Dakota. The primary purpose in constructing these dams was to provide flood control for downstream states. The goal of flood control has been magnificently achieved with cumulative flood control savings through 1984 estimated at over $2 billion. In addition, no value can be placed on the human tragedy and loss of life that has been avoided. The offsetting benefit promised by Congress to South Dakota and other Upper Basin states was the construction of major Federal irrigation projects. Of the over 950,000 acres of Federal irrigation development promised for South Dakota, only 24,100 acres has been finished.

We call on Congress to meet its commitments to develop Federal irrigation projects as part of the "bargain" that was struck with the Upper Basin states to trade flood control for irrigation. We recognize that the Oahe Unit which has been authorized and partially constructed was intended to begin the development of Federal irrigation projects within the framework of the Pick-Sloan Plan. The Oahe Unit will not be constructed but we do believe that the authorization for that project should be retained until South Dakota is assured significant compensation within the Pick-Sloan framework.

Specifically, we support authorization and funding of the CENDAK and Lake Andes-Wagner Irrigation Projects, both of which are proposed to be authorized as Pick-Sloan projects. These two projects which have had significant study and enjoy strong local support can serve as a significant step towards Congress meeting its part of the "bargain." As part of the authorization for the CENDAK Project, we support the use of the existing $30-million investment that has been made in features that were constructed as part of the Oahe Unit. We offer our strong support for the timely authorization and funding of these projects.

Of major concern to us is the outstanding costs which are part of the Pick-Sloan Plan which have been assigned for repayment by irrigators. Irrigators in Federal projects who receive water stored by the Missouri River mainstem dams are obligated to make payments to assist in retiring the outstanding Federal debt associated with the construction of these dams. In return, irrigators in Federal projects have access to Federal irrigation pumping energy and the assistance of hydroelectric ratepayers in the irrigation project repayment.

PROTECTION OF PICK-SLOAN BENEFITS (Cont'd)

Before any move to deauthorize the Oahe Unit is made, a firm commitment must be obtained clearly stating that the outstanding debt obligation, presently assigned to irrigation, will not be reassigned for repayment to the hydroelectric users of this region. Such a move would result in an unmerited increase in the price of hydropower to repay an investment which is not the responsibility of the hydroelectric consumers.

We are aware of efforts by the Bureau of Reclamation and others to increase the power users repayment obligations with the addition of major investments for municipal water supply features. Presently the Bureau of Reclamation is seeking to add $300-million of project investment for municipal water delivery in the Central Utah Project for repayment by power users. The Garrison Study Commission, over the objection of the State of North Dakota, recommended adding substantial municipal water delivery investments to the power users repayment obligation. While East River supports multi-purpose water project development, including domestic water delivery, the addition of a major new function to already authorized water projects without Congressional action and a definition of the domestic users repayment responsibilities is unacceptable. East River opposes these unauthorized additions of major municipal water investments which will increase power rates.

East River acknowledges efforts being made to obtain special legislation granting Federal pumping energy to non-Federal irrigators without an accompanying obligation to share in Pick-Sloan Project costs. Such special legislation violating the basic investment allocations of the Pick-Sloan Project is not in East River's best interest. Accordingly, East River opposes legislation seeking such special grants.

Dear Sirs,

Here is written testimony that I do not want any authorization of any kind in any way,shape, or form towards any irrigation project in the Lake Andes-Wagner area. Further more I want all funds cut off and the spending stopped in the district immediately.

I can list several reasons why this should be stopped. The only people who want this irrigation district are those on the two boards who think they will get rich and those who want job security out of it. The Bureau of Rec. people only pust it to keep their jobs.

Very few of the actual owner's and operators of the acreages involved know what is even going on because the people pushing it don't talk to anyone unless they are in favor of it.

I was lied to and tricked into signing a form and refused to be given a copy of it after I signed it.

All the city organizations are in favor and push the irrigation because they are led to believe they will benefit by additional wealth from it. Nobody realizes that the persons paying for it is the land owner, not the city people.

Common sense tells a person that raising more crops won't gain a better price with an already flooded market. One branch of government pays farmers not to plant grain and another tries to force irrigation to raise even more grain.

I have one field that the Soil Conservation people have classified as high erosion land for cost sharing to seed to grass. The irrigation district has it as class I irrigation land. Any farmer in the area knows it is not suitable for irrigation.

Banks are running scared now with the economy as it is. They won't loan farmers money now, so how do you expect the banks to loan money for irrigation equipment. Only the large operators and corporations will servive and take over, and yet the govermnent says they are helping the family farmer.

If every person who has land involved in this district voted there would be about 90% who would not want the irrigation. In 1979 it was voted down by a 2/3 majority vote, but that didn't tell you people anything. In 1980 we got hit with a $1.75 per acre tax to pay back the feaseability study.. How much more will we be paying after this ordeal is done. I think now is the time to get this thing stopped once and for all.

I don't stand alone on this issue. I am only one of a few who will stand up and speak out.

James L. Simmermon

RCR POLLED HEREFORD
JAMES & BONNIE SIMMERMON & SONS
RR 1 BOX 89
LAKE ANDES, S.D. 57356

STATEMENT OF

GEORGE SCULLY

SOUTH DAKOTA BOARD OF WATER
AND NATURAL RESOURCES

ON S. 252

LAKE ANDES-WAGNER UNIT

BEFORE THE

SUBCOMMITTEE ON WATER AND POWER RESOURCES

COMMITTEE ON ENERGY AND NATURAL RESOURCES

UNITED STATES SENATE

NOVEMBER 2, 1985

Mr. Chairman, my name is George Scully and I am the chairman of the South Dakota Board of Water and Natural Resources (BWNR). I have been authorized by the South Dakota BWNR to deliver the following message to this Committee: The South Dakota BWNR strongly supports the Lake Andes-Wagner project and urges you to immediately approve S. 252 for the benefit of the state and the nation!

The South Dakota BWNR is established by state statutes and consists of seven members representing the general public. The South Dakota BWNR has the statutory authority to: 1) Establish state policy regarding water resource projects; 2) Provide state comment on federal water projects and federal water policies; 3) Resolve any conflicting interests in the development of state water projects; 4) Coordinate state water project development activities; and 5) Cooperate with other governmental agencies in the development of state water projects.

Given the broad authority of the South Dakota BWNR, it is entirely appropriate for us to present testimony in support of the Lake Andes-Wagner project. In fact, as part of our statutory responsibility, each year we review all proposed water projects within the state for possible inclusion in the state water plan. The state water plan is a project-specific document which identifies our top water projects and which serves as an economic development blueprint. Every local project sponsor and unit of government in the state that is interested in pursuing a water resources project with state assistance must submit an application to be included in the state water plan. Every proposed water project, however, is not included in the state water plan. Based on a specific set of criteria, the South Dakota BWNR recommends only those projects for inclusion in the state water plan that are feasible, environmentally and technically sound and worthy of state support. In 1983, for example, the South

Dakota BWNR received over 160 water plan applications. Less than half of these applications were approved by the South Dakota BWNR and submitted to the Governor and State Legislature for support.

As part of the state water plan review process, the South Dakota BWNR has consistently approved the application of the Lake Andes-Wagner local project sponsors and recommended that this project should be considered as a high state priority. It is a pleasure to report that our Lake Andes-Wagner recommendation has been supported each year by the Governor and the State Legislature for inclusion in the state water plan. Clearly, any project that goes through such an extensive review process and consistently receives a priority ranking by all concerned must be viewed as a highly valuable project worthy of state and federal support.

We have supported the Lake Andes-Wagner project at the state level and will continue to support it. Now it is time for the federal government to do likewise. The federal government has been willing to provide substantial funding to several other Western states for projects similar in function to Lake Andes-Wagner only much more costly. Lake Andes-Wagner will provide benefits to the state and the nation without busting the federal budget and deserves your support. If this Committee acts on an equitable policy basis, then the Committee has no choice other than to immediately approve S. 252.

Technical Statement of B. E. Martin
Acting Regional Director, Upper Missouri Region,
Bureau of Reclamation
Before the Senate Energy Subcomittee on Water and Power -
Field Hearing, Wagner, South Dakota, on S. 252

November 2, 1985

I appreciate this opportunity to discuss the technical aspects of the Lake Andes-Wagner Unit. The planning process for the investigation of the Lake Andes-Wagner Unit is nearing completion. The planning report/final environmental statement has been filed with the Environmental Protection Agency and the required 30 day waiting period concludes on October 28. Following the required waiting period, the Commissioner of Reclamation may then make a decision to send the planning report/final environmental statement to the Secretary of the Interior for his approval and transmittal, through the Office of Management and Budget, to the Congress. Until these actions are complete we can make no recommendation on the unit.

The potential Lake Andes-Wagner Unit would be a 45,000-acre irrigation project. Water for the project would be provided from Lake Francis Case behind Fort Randall Dam. This unit would be developed as part of the Pick-Sloan Missouri Basin Program.

I would like to give some background about this project before I discuss the specifics of the plan proposed by S. 252. Studies in this area have been relatively active for a number of years. Our first investigation in the area was completed in 1966 and updated in 1972. Those early studies showed development was feasible but drainage costs were relatively high. Because it lacked strong State and local support the study was administratively concluded. Then in 1976, the Lake Andes-Wagner Irrigation District hired a private consultant to assess the potential for non-Federal irrigation development of the area. The District elected not to proceed with this proposal in 1978 because of the high cost of private financing.

In 1979, during the Bureau of Reclamation's study of the Lower James and Fort Randall Water Diversion Proposal, the Lake Andes-Wagner Irrigation District requested that Reclamation reformulate the Unit in an attempt to develop a feasible plan, and we initiated our present planning studies.

The study area is broken into two sections - west and east of Choteau Creek. Initially, due to funding and time constraints, the project sponsors elected to include only those lands west of Choteau Creek in the planning study. As the west Choteau Creek planning study progressed, it became increasingly evident that there was considerable interest in irrigating lands east of Choteau Creek. Therefore, the local sponsors obtained a loan from the State of South Dakota to study the lands east of Choteau Creek.

The legislation before the Congress at this time would authorize the development of the irrigable acres west and east of Choteau Creek for a total of 45,000 acres. This irrigable area also includes about 1,700 acres of Yankton Sioux Tribal lands.

I would like to direct your attention to the map on the wall and I will briefly describe the project features.

The project land would be irrigated with sprinkler systems, mostly center pivots. The annual diversion for the project would be 94,000 acre-feet. This is about 1/2 percent of the annual releases from Fort Randall Dam. This water would be pumped by the main pumping plant - the North Bay Pumping Plant - located on the arm of Lake Francis Case called North Bay. This site is about 3 miles south and 1 mile west of the town of Lake Andes. This plant would be an outdoor type with a rated capacity of 737 cubic feet per second and a total dynamic head of 230 feet. Six 54-inch-diameter steel intake pipes would extend into North Bay. Fish screens would be placed on the ends of the intake pipes. These screens have small openings (0.25 inches) and waterflow velocities are only 0.5 foot a second. Those factors coupled with a depth over the screens of at least 20 feet during fish spawning and rearing, would minimize loss of fish.

Water would be pumped from the pumping plant into the main canal for delivery to project lands. This 16-mile long canal would have an initial capacity of 710 cubic feet per second. The canal would traverse a side hill in a northeasterly direction for about the first 6-1/2 miles of its route and then continue in an easterly direction until it branches about 2 miles southeast of Ravinia. North Branch Canal would flow north. The Main Canal would continue eastward and would branch again where Southeast Choteau Canals begin. From here the canal would parallel section lines to the Wagner Relift Pumping Plant. Six large relift pumps would be needed to serve lands in those areas which are higher than the canal - one near the northern end of the project area, one near Wagner, three to serve the lands east of Choteau Creek, and one to serve the lands on the northwest side of Lake Andes. There would also be 10 smaller relift plants and a drainage system. This system of surface and subsurface drains would remove excess water and return flows from the project area. An irrigation management system is a part of the plan to increase efficiencies and limit application of water. Installation of subsurface drains would be deferred until they are needed, which could range from 5 to 40 years.

As part of the project, the South Dakota Department of Game, Fish and Parks would cost-share construction of a fish-rearing pond on North Bay for enhancement of the Lake Francis Case fishery.

Wildlife habitat losses due to development of the project would be fully mitigated. The important habitat types in the area are woodlands (multirow shelterbelts), wetlands, and grasslands. To mitigate wetland losses, up to 2,700 acre-feet of water would be provided to Red Lake and up to 1,400 acre-feet of water to Owens Bay. Water delivery to the wetlands would be under the direction of the refuge managers. Management of water levels would allow wildlife managers to control aquatic vegetation and thereby enhance brood habitat and improve nesting conditions. This would increase their value as wildlife areas.

In addition, 4 acres of wetland easements would be acquired, and 365 acres of existing wetlands would be purchased and provided a controlled water supply. Where possible, those wetlands would be acquired in conjunction with grassland and woodlands to create wildlife complexes which would be managed by the U.S. Fish and Wildlife Service and the South Dakota Department of Game, Fish and Parks. To mitigate for woodlands and grasslands, about 2,350 acres would be purchased, planted, and managed. Canal and lateral rights-of-way would be seeded to native grasslands.

The diversion of water for the project and return flows would have no significant effect on Lake Francis Case or the Missouri River. Return flows would accrue to Lake Andes and Choteau Creek. Measures would be taken to assure State total dissolved solids (TDS) water quality standards (2,500 milligrams per liter) are met. Lake Andes only stores water during periods of high runoff and is dry 1 out of 20 years. The water quality varies from 550 to 6,400 milligrams per liter of TDS. About 6,175 acre-feet of project return flows would enter Lake Andes each year. From October through April the return flows would be about 2,900 milligrams per liter TDS. Therefore, Lake Francis Case water would be provided to dilute the return flows to meet State standards. There is ample capacity in the canals to provide up to 150 acre-feet per day during off-peak irrigation periods.

Choteau Creek is an intermittent stream. About 23,600 acre-feet of return flow would enter Choteau Creek. Summer water quality probably would not be altered. Because return flows would average 2,900 milligrams per liter TDS, a 1,450-feet ring dike would be constructed along Choteau Creek to store water for dilution purposes. This water would be released from the dike during low flow winter months to meet the State water quality standard. It is anticipated that construction of this dike would be deferred until the first subsurface drains are functioning, or about 5 years.

The total cost of the project is $150,000,000.

One item I have not addressed is providing water to Lake Andes for recreation and fish and wildlife enhancement. There would be excess capacity available in the project supply works - except during the peak irrigation season - to deliver water to enhance and maintain Lake Andes. However, ownership of this lakebed is currently in litigation between the State of South Dakota and the Yankton Sioux Tribe. Negotiations are progressing and when resolved, consideration could be given to providing water to Lake Andes.

In summary, we have enjoyed working jointly with the State, the project sponsors, and the Yankton Sioux Tribe toward a common goal - a plan that is acceptable to all.

To: Senate Committe on Irrigation

October 31, 1985

Daniel A. Morrow, Farmer
Plainscenter Township

Dear Sirs:

I am not interested in your irrigation project. I cannot afford it and do not have any desire to irrigate.

There are at least five farmers irrigating in my neighborhood at the present time who have partially or competely quit irrigating. These farmers cannot afford to buy diesel fuel, propane, or electricity to operate their pumps. How can we afford to buy systems for our land in addition to buying the water? At today's prices irrigation is just not feasible for me.

Daniel A. Morrow

To Whom It May Concern;

I am writing to voice my opposition to the Lake Andes- Wagner Irrigation project. Several reasons lead me to conclude this project should not be authorized.

This project is not feasible because the benefits to a few farmers do not warrant spending the huge sums proposed. Using the local boards figures, it will cost between $450,000 and $500,000 to bring water to the property line of each farm. Any thinking person should see this is totally out of reason!

This project is being pushed primarily by the local board, the state bureau of water and natural resources and the U.S. Bureau of Reclamation. Human nature being what it is, this is only natural because these types of projects justify these people's jobs. But I travel through this proposed irrigation district six days a week and I have yet to hear a farmer say they support this project! The"local support" that has been so much touted in the local media comes from the aforementioned boards and federal departments. I am sure you are well aware of the farm economy. The farmers have debt enough without hanging this unneeded anchor around their necks for the next forty years. This could surely be the straw to break the backs of many people barely hanging onto their way of life. I firmly believe the concerned farmers,those who will have to pay for this pork barrel, should be taken into account!!

It is easy enough to put figures on paper and make them project what you want to see. But when the smoke clears, those farmers who can ill afford it will be saddled with a forty year debt.

Given the prices we receive for our commodities, this project is not in the best interest of the affected farmers.

Thank you for the opportunity to express my thinking on this matter.

Respectfully Yours,
Burton E. Weaver

Burton E. Weaver
Lake Andes, S.D.

South Dakota Resources Coalition

Volunteers in the Public Interest

Nov. 13, 1985

Drawer G, Brookings, S.D. 57007

Senator Frank H. Murkowski, Chairman
Subcommittee on Water and Power, Energy and Natural Resources Committee
U. S. Senate
Washington, D. C. 20510

Re: Lake Andes-Wagner Unit

Dear Senator Murkowski:

The South Dakota Resources Coalition strongly opposes the proposed plan for the Lake Andes-Wagner Unit for the following reasons:

1. The benefit/cost ratio computed by standard Water Resources Council Principles and Guidelines is only 0.62. Because of this unfavorable ratio an "alternative procedure" was used that inflates the ratio to 1.06. The "alternative procedure" is an unjustifiable mechanism to promote a disastrous economic investment. If Water Resources Council published agricultural prices are used to measure benefits, the net annualized losses are about $5.4 million. How the inflated benefits in the Bureau of Reclamation's "alternative procedure" were calculated is mystifying since the benefits are about twice those calculated under Water Resources prices, yet the differences between the two price standards is small; e. g., the WRC corn price is $2.95 and the "alternative procedures" price is $3.19; yet corn is the major crop both "with the plan" and "without the plan."

2. The total cost of the project is $150 million and the cost per acre is more than $3000. Irrigated land can be purchased in the area for $1000 per acre or less. This makes the project nonsensical even if there were no federal budget crisis.

3. Both irrigators and dryland farmers are having a tough time because of low prices caused by surpluses. Most farmers are losing money and irrigators are no better off than dryland operators. Bank loans are stretched to the limit in most cases. Where will farmers who are expected to be project beneficiaries get capital for sprinkler systems? How can they repay their small share of reimburseable costs along with OMR costs? Or the costs of operating sprinkler systems--even at the Pick-Sloan rate of 2.5 mills? Or the costs of additional seed and chemicals used under irrigation? (Chemical usage, e. g., is expected to increase from 1.6 lbs/acre on dryland corn to 13.7 lbs/acre on irrigated corn.)

4. Repayment obligation of irrigators has been estimated for the year 1995 (at the end of construction and a two-year development period). A change in economic conditions will bring an adjustment up or down. The historic direction of recalculation of repayment obligations on BR projects has been to decrease them. As usual, however, these likely decreases have not been included in the economic evaluation. (One has only to look at South Dakota's Belle Fourche project, begun in 1902, for an example of decreasing repayment obligations and a miserable repayment record.)

5. Power rates are figured as constant over the life of the project--another unjustifiable device to puff up benefits. Furthermore the BR has grossly underestimated the cost of replacement of Missouri River power that will result from diversion

Lakota Audubon Society, Brookings • Missouri Breaks Audubon Chapter, Pierre • Black Hills Energy Coalition
National Catholic Rural Life Conference, Sioux Falls Diocese • CRUD (Community Recyclers of Usable Discards, Sioux Falls)
Dakota Environmental Council, Vermillion • Upper Sioux River Basin Conservancy Council • South Dakota Lung Association
Brookings County National Farmers Organization • Lake County National Farmers Organization • South Dakota Ornithologists Union
Dakotah Chapter of the Sierra Club, South Dakota Section • Soil Association of South Dakota
Individual Citizens of the State of South Dakota

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of water from Ft. Randall and GavinsPoint dams and from pumping and sprinkler operations. To calculate the cost of replacement power from non-federal sources, the BR uses a figure that is not even double the average Pick-Sloan rate for contract users even though the actual replacement rate is more than 8 times the Pick-Sloan rate. Other Pick-Sloan power users will not only have to pay higher rates because of the need for more fossil fueled power in the mix and because of subsidy of project beneficiaries who will run sprinklers for 2.5 mills while the rest of us pay up to 80 mills, but Pick-Sloan power revenues are slated to pick up all costs allocated to irrigators that will not be repaid by these beneficiaries for one reason or another.

6. Irrigation return flows will not meet South Dakota's water quality standard for total dissolved solids of 2500 mg/l. Dilution water will be added for the benefit of Choteau Creek and Lake Andes. A ring dike to hold 1450 acre feet for dilution pruposes will be constructed at a cost of $3,500,000. It is not clear that this cost has been included in the evaluation. Only one-fourth the cost of drainage, much of which will be added later, has been included in the economic evaluation. Yet drainage on irrigation projects across the country is an ongoing drain on public funds decades after irrigation projects have been built. It would be hard to find a project where the BR estimate of drainage costs at project authorization bears much resemblance to actual costs. The use of only 0.245 of each $1.00 of expected drainage costs in the Lake Andes-Wagner Unit calculations is an especially blatant example of the BR's efforts to use unrealistic drainage cost estimates to make the benefit-cost ratio look better.

In summary, the tip-toe, ultra careful type of management required to avoid salting of soils, the net loss of 300 acres of wetlands, the failure to include mitigation plans for non-habitat functions of wetlands, the heavy consumption of expensive and scarce hydropower, the production of more surplus commodities, the repayment limitations of project beneficiaries, the very likely inability of dryland farmers to make the necessary capital investment, and the project's exorbitant cost per acre combine to dictate the no action alternative as the only sensible one.

We urge that this project not be authorized.

Very truly yours,

Esther R. Edie

Esther R. Edie, Chair